

General Disclaimer

One or more of the Following Statements may affect this Document

- This document has been reproduced from the best copy furnished by the organizational source. It is being released in the interest of making available as much information as possible.
- This document may contain data, which exceeds the sheet parameters. It was furnished in this condition by the organizational source and is the best copy available.
- This document may contain tone-on-tone or color graphs, charts and/or pictures, which have been reproduced in black and white.
- This document is paginated as submitted by the original source.
- Portions of this document are not fully legible due to the historical nature of some of the material. However, it is the best reproduction available from the original submission.

X-843-83-4

(NASA-CR-172702) NASCOM NETWORK GROUND
COMMUNICATIONS AVAILABILITY REPORT (For
Aerospace and Communications Corp.) 102 p
HC A06/MF A01

CSCW 17B

G3/32 22754

N 83-28296

Unclass

NASCOM NETWORK GROUND COMMUNICATIONS AVAILABILITY REPORT



MAY 1983

NASA

National Aeronautics and
Space Administration

Goddard Space Flight Center
Greenbelt, Maryland 20771

NASCOM NETWORK
GROUND COMMUNICATIONS AVAILABILITY REPORT
MAY 1983

Prepared by
FORD AEROSPACE AND COMMUNICATIONS CORPORATION
UNDER CONTRACT NAS 5-27550

for
THE NASA COMMUNICATIONS DIVISION
(CODE 840)
NETWORKS DIRECTORATE

GODDARD SPACE FLIGHT CENTER
Greenbelt, Maryland 20771

GROUND COMMUNICATIONS AVAILABILITY REPORT

CONTENTS

	<u>PAGE</u>
INTRODUCTION	1
General	1
Definition of Terms	1
Availability Formulae and Calculations	2
Data Sources	2
SUMMARY OF NASCOM NETWORK PERFORMANCE	5
Data Discussion	5
ANALYSIS OF INDIVIDUAL CIRCUITS	7
General	7
INDIVIDUAL CIRCUIT SUMMARIES	10
TROUBLE CATEGORIES LEGEND.	12
LONG TERM NETWORK ANALYSIS	31
CIRCUITS WITH LOW AVAILABILITIES	81
SELECTED CIRCUIT ANALYSIS	82
INTRODUCTION	82
SPECIAL PRESENTATION - ANALOG WIDEBAND	92
NETWORK REVIEW AND ANALYSIS DATA ACTIVITY	94
GLOSSARY	95

TABLES

<u>Table</u>		<u>Page</u>
I	Circuits That Failed To Meet Objective	7
II	Circuits With Lost Time By Trouble Category With Scheduled Operating Hours, Availability Percent and Mean Time To Restore	13
III	Lost Time and Events By Trouble Category For Each Mode Of Service	29

TABLES (CONT)

ORIGINAL PAGE IS
OF POOR QUALITY

<u>Table</u>		<u>Page</u>
IV	Nascom Network Circuit Availabilities	31
V	Network Lost Time By Trouble Category For Current Month	88
VI	Network Circuits By Mode For One Year	89
VII	Network Statistics For One Year	89

ILLUSTRATIONS

<u>Figure</u>		<u>Page</u>
1	Nascom Network Trunking Scheme	3
2	Availability Percent For A Period Of One Year	6
3A	Percentage of Lost Time By Trouble Category For The Current Month	27
3B	Percentage of CMA's By Mode of Service For The Current Month	28
4	Sixteen-month B- Category MTTRes Trend	90

NASCOM NETWORK
GROUND COMMUNICATIONS AVAILABILITY REPORT

ORIGINAL PAGE IS
OF POOR QUALITY

INTRODUCTION

The Nascom Network is a global point-to-point ground communications system developed to support manned space flight and unmanned scientific satellite missions, of the National Aeronautics and Space Administration of the United States of America. Tracking stations and NASA facilities around the world are interconnected by long line communications circuits using a combination of satellites, submarine and landline cables, and microwave segments. Dedicated individual circuits carry teletype, voice or high-speed data or a combination of these in realtime support of NASA's missions. The hub of this system is the message switching computer and other conferencing, monitoring and patching facilities at the Goddard Space Flight Center, Greenbelt, MD.

GENERAL

This report presents a performance analysis of these Nascom Network circuits, and it is prepared and distributed monthly using data accumulated through the last day of the month preceding its cover date. An objective of 99.80 percent availability has been established for all network circuits and an acceptable level of 99.50. A network narrative summary for the current month is presented first, which includes changes in network configurations, current month's totals for modes of service and trouble category losses, a discussion of trends, and significant losses that affected the performance indexes of individual or groups of circuits. This is followed by a table and narrative summary of those circuits that failed to meet the objective. Lost time and interruption tables showing all circuits affected by outages, by trouble category, with their total time and events, scheduled operating hours, and individual availability indexes also are presented. A special presentation is made on selected circuits (Selected Circuits Analysis) whose availabilities have or continue to affect the overall network availability.

DEFINITION OF TERMS

Narrative and tabular data are given in alphanumeric order by the geographic location of the circuits' terminal points. Circuits which connect Goddard (GSFC) directly with a tracking station, switching center, or other facility are listed under the appropriate geographic name of the terminal, such as, "Houston (JSC)" or "Canberra." Circuits which connect GSFC with more than one terminal location are listed under a joint heading, such as "Cape Canaveral XY & Houston (JSC)." Those facilities which are served by a switching center or patch facility other than GSFC are shown under their terminal location followed by a "/" and the name of a facility that serves them, such as, "Canberra STDN (Orroral Valley)/Canberra." Further, when circuits are routed by designated systems, they are so indicated by a notation such as "via COMPAC" or "via INTELSAT." In addition, when there is more than one activity at the same geographic location, the activity is designated in parenthesis, such as "Cambridge (MIT)" or "Cambridge (SAO)." This same determination applies when the activity may be better known by another more common name, such as "Cleveland (Lewis Research Center)."

The terms "transmit" and "receive," when used, denote transmission to and reception from a "terminal point" with GSFC or the named intermediate switching center as the initial point. Prior to December 1970, lost time and scheduled

operating hours were calculated on each path (TX/RX) individually. The figures shown in this report reflect a combination of both paths on each circuit.

AVAILABILITY FORMULAE AND CALCULATIONS

Operational availability, as used in this report, is defined as the probability that a system or equipment, when used under stated conditions and in an actual supply environment, shall operate satisfactorily at any given time. The following formulae were used to obtain the availability parameters:

$$A_o = \frac{MTBCMA}{MTBCMA + MDT} \times 100 \text{ , or; } \frac{\text{Uptime}}{\text{Uptime} + \text{Downtime}} \times 100 \text{ ,}$$

where MTBCMA is defined as Mean-Time-Between-Corrective-Maintenance-Actions and MDT is defined as Mean Downtime, including supply downtime and administrative downtime during the same time interval. The term Corrective-Maintenance-Action (CMA), as used in this text, denotes any action to restore an interrupted circuit or system and is classified as belonging to one of the ten trouble categories defined within this report.

Previous availability reports presented a parameter that the Network Review & Analysis Section, in generating subsequent data, should define. Particular note should be taken of the distinction made between Mean-Time-To-Restore (MTTRes) and Mean-Time-To-Repair (MTTR). In the vast majority of cases, telephone administrations support operating equipment with either local or centralized inventories of spare units, and the "repair" function is very rarely involved in the restoration of service. In future discussions, the MTTRes term is used to indicate the time required to obtain a replacement unit from stock including all delay times such as awaiting transportation, weather, higher priority work, etc. The MTTR defines the time required to physically repair the defective unit usually at a distant facility and does not reflect RF anomalies, no trouble found or other categories where a unit was not at fault but a degradation of service was evident. Future reports will reveal the MTTRes baseline data as a more meaningful statistic than MTTR.

DATA SOURCES

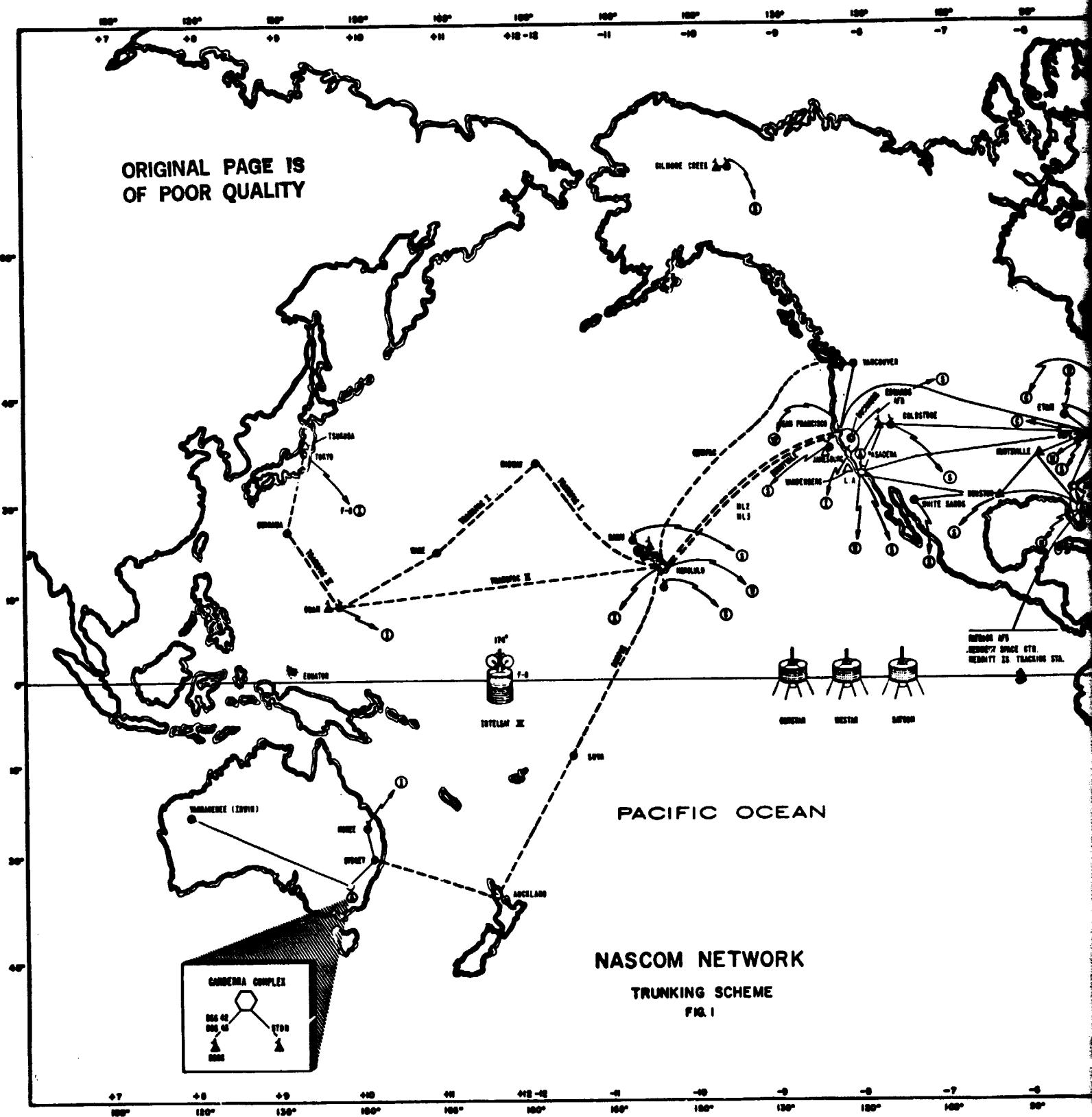
The data or information used in preparing this report has been obtained from the Nascom Network Trouble Tickets (GSFC Form 840-7), NASA Circuit Logs (GSFC Form 22-8T), and Daily Communication Reports (DCR). They provide most of the data or information used in the Availability Report. Whenever an ambiguity appears between the Trouble Tickets and a DCR, or in any of the other data sources, Network Review and Analysis Section personnel contact the site or station involved to clarify, correct, or reconcile the data. Further, failures and losses that involve domestic and/or international record carriers are discussed and reconciled prior to their use in this report.

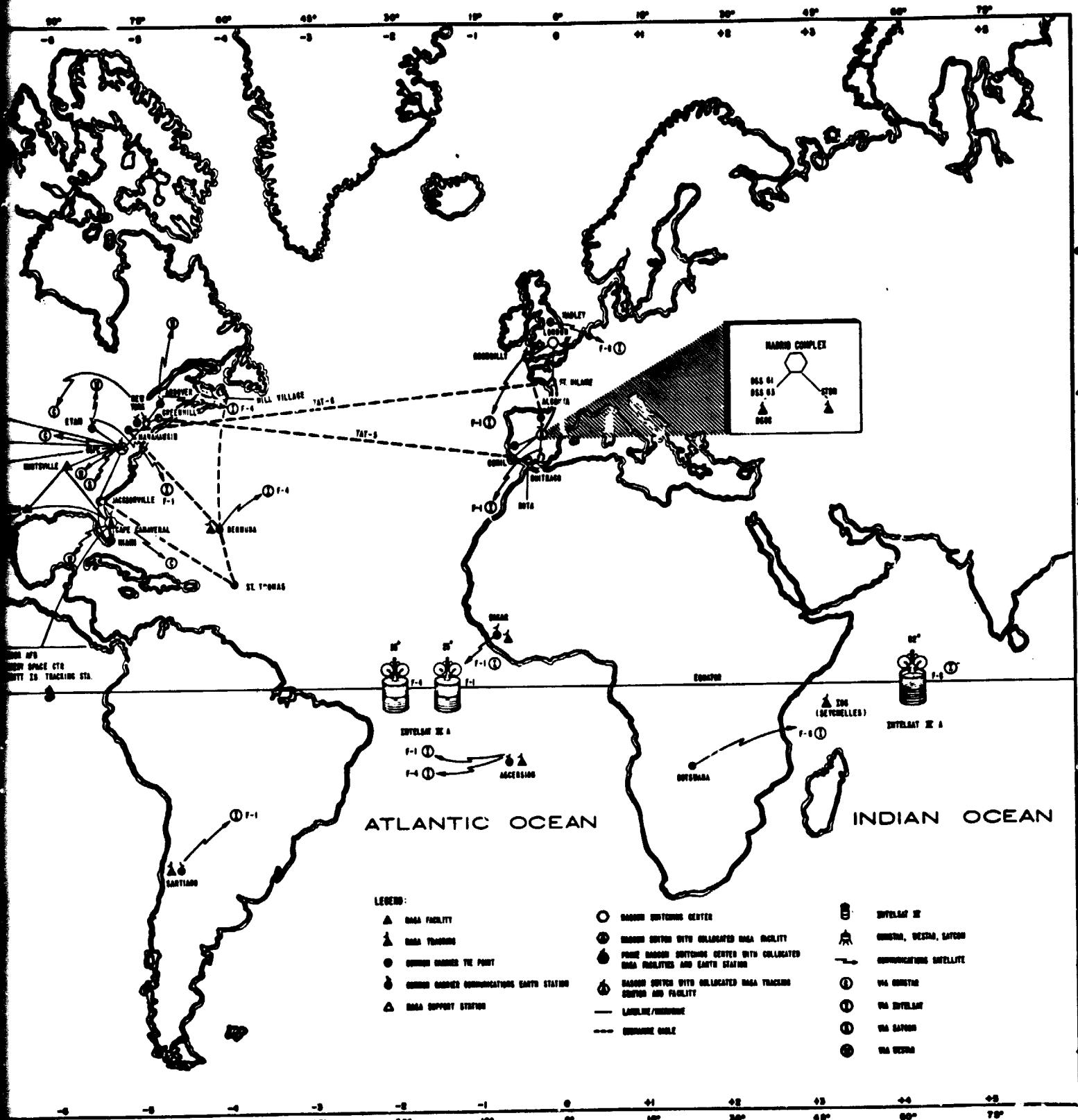
To provide a "common denominator" for recording and interpreting trouble areas, various categories have been devised. Incidents are classified on this basis, and on the basis of mode of operation, permitting interruption patterns to be determined quantitatively. The category and mode designations are shown in the Trouble Category Legend.

Comments, questions or conflicts concerning data used in this report should be directed to the Ford Aerospace & Communications Corporation, 4920 Niagara Road, College Park, Maryland 20740, Attention: Supervisor, Network Review & Analysis. Request for additional copies, or to be added to or deleted from the mailing list should be directed to the same address.

ORIGINAL PAGE IS
OF POOR QUALITY

ORIGINAL PAGE IS
OF POOR QUALITY





2 REDOUBT FRAME

ORIGINAL PAGE IS
OF POOR QUALITY

SUMMARY OF NASCOM NETWORK PERFORMANCE FOR APRIL, 1983

DATA DISCUSSION

The network availability increased from 99.45 percent to 99.75 percent for the month of April; it averaged 99.74 percent for the past 12 months.

The number of active circuits increased from 630 to 646 in April. The individual circuit modes were 248 for analog voice grade; 193 for analog voice/data; 65 for digital wideband data; 54 for teletype; 52 for digital narrowband data; 13 for analog wideband data; 13 for analog narrowband data; 5 for video; and 2 for facsimile.

Interruptions to service were incurred by 188 circuits during 449465:46 hours of scheduled operating time and resulted in a combined lost service of 1,113:47 hours. The April lost time was distributed among seven of the nine modes of service in the following manner: 320:10 hours on 45 analog voice grade circuits; 45:56 hours on 12 teletype circuits; 235:18 hours on 74 analog alternate voice/data circuits; 145:19 hours on 24 digital narrowband data circuits; 270:51 hours on 30 digital wideband data circuits; 75:07 hours on one video circuit; and 21:06 hours on 2 analog narrowband data circuit.

Lost time was incurred in nine of the ten trouble categories with the largest being 760:49 hours for leased system fault. This represents 68.85 percent of total outage time. The other totals were 51:51 hours, 4.65 percent for acts of nature damage; 206:57 hours, 18:58 percent for carrier control time; 41:53 hours, 3:76 percent for undetermined causes; 6:11 hours, 0.03 percent for government equipment fault; 4:50 hours, 0.43 percent for electrical power; 3:02 hours, 0.27 percent for man-made damage; 24:12 hours, 2.17 percent for radio frequency anomalies; and 14:02 hours, 1.26 percent for government facilities.

Of the 188 circuits that incurred lost time, 101 had operational availabilities below those specified for their transmission media, (as defined on page 1). They involved service to 79 stations and their combined total lost time of 106:02 hours represented 95.71 percent of the network outage.

An outage of approximately 40 minutes commencing 1905Z on 10 April affected 12 circuits due to a microwave failure between Greenbelt, Maryland and Garden City, Virginia. The 12 circuits had a combined lost time of 7:48 hours.

A noise problem on the RCA-F2 satellite receiver commencing 2053Z, 27 April, affected GWAV-8092 which could not meet signal-to-noise ratio specifications. It was later found that 34 additional circuits were affected by the noise which caused the commercial carrier to switch to the F1 satellite, transponder 17. The combined lost time due to the interference was approximately 615:08 hours.

PRECEDING PAGE BLANK NOT FILMED

ORIGINAL PAGE IS
OF POOR QUALITY

The network was affected on 26 April due to the commercial carrier working on a different baseband in Alcantana, Spain. The disruption caused a 24 minute outage on 21 circuits for a total lost time of 8:24 hours.

Several sites throughout the network were impaired by commercial power failures which affected leased circuit operations. The sites were: Moree earth station on 29 April for 13 minutes; power fluctuations at Gandoul earth station on 6 April for 6 minutes; power failure at Gilmore Creek on 10 April for 5 minutes affecting 8 circuits; and another on 13 April at Guam for 1:15 hours.

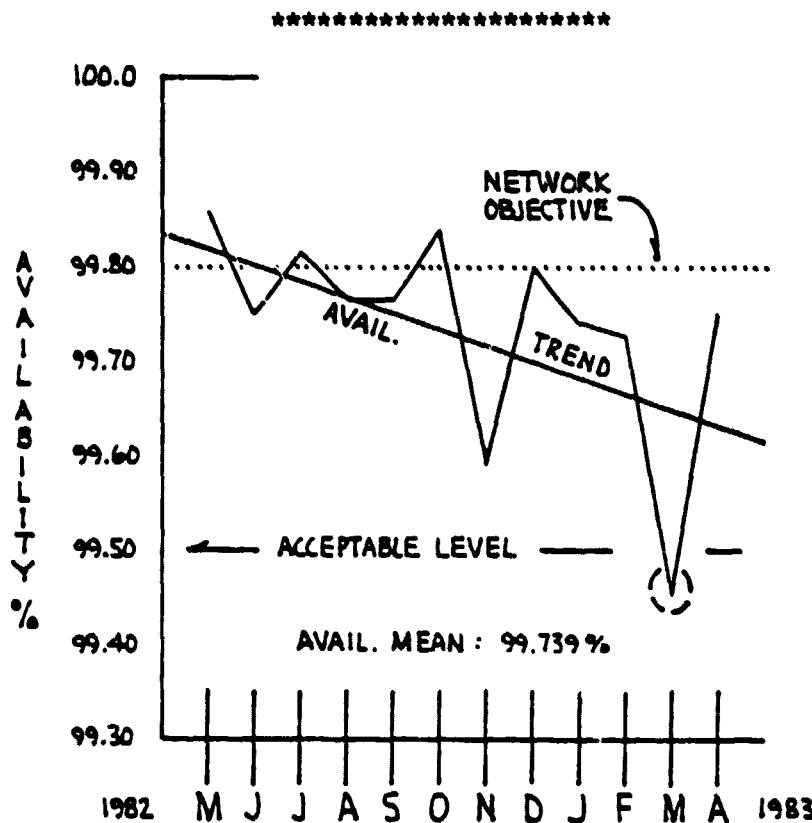


FIG. 2: NETWORK AVAILABILITY.

Figure 2: Summary

The graph above shows the network availability monthly plots for the past 12 consecutive months; May 1982 to April 1983; and includes the respective linear regression trend. The availability plot for April (99.75%) did not meet the network objective nor did the 12 month mean, 99.739%. The unfavorable trend will continue to be influenced by the March 1983 plot (99.45%) due to "Acts of Nature Damages." The NASCOM support availability towards STS-6 in April was 99.756% which appears compatible to the network as a whole. Refer to last months Availability report on specific STS-6 statistics which commenced 2 April, 1130Z.

ANALYSIS OF INDIVIDUAL CIRCUITS

ORIGINAL PAGE IS
OF POOR QUALITYGENERAL

This section of the report examines the performance of individual circuits as compared to the overall performance objective.

A table of circuits that failed is presented first, showing their respective current month's availability percent, the percentage difference between their current month's figure and the objective, and the number of consecutive months the circuit has failed, as shown in Table I. This is followed by the Individual Circuit Summaries which presents an analysis in narrative form of these circuits for the current month. In general, the discussions are limited to significant losses (1:00 hour or greater) with reasons and locations of failures and their affect on the overall performance of the circuit.

Also presented in this section is Table II showing all circuits with lost time recorded against them defined by trouble category with their availability percents and the average duration (Mean Time To Restore) of their respective failures. This is followed by Tables IIIA and IIIB depicting loss time by trouble category for each mode of service.

Table I
Circuits That Failed To Meet Objectives: 101

TERMINATING STATION	CIRCUIT NUMBER	MODE OF SERVICE	AVAILABILITY PERCENT	PERCENT DIFFERENCE	CONSECUTIVE MONTHS
Ascension Island via Etam (IS IV A F-1)	GDA-58573	VDA	99.31	.49	2
Ascension Island via Andover (WESTAR/IS V F-2)	WUI-175	WDD	99.19	.61	2
	-197	WDD	99.56	.24	2
	-198	WDD	99.47	.33	2
Bermuda Island via Andover (IS V F-2)	GDA-58550	VDA	97.86	1.94	4
	-58552	VDA	98.31	1.49	1
Bermuda Island via Andover (WESTAR & IS V F-2)	WUI-194	WDD	99.76	.04	2
Bermuda Island via Manahawkin Sub Cable	GDA-58440	VDA	99.06	.74	1
	-59211	VDA	99.36	.44	1
Bethesda (Mr. Beggs)	74PL-26479	VOC	93.56	6.24	1
Boulder (Univ of Colo-Lasp)	GDA-58992	DDS	97.83	1.97	3
	-58993	DDS	97.85	1.95	3
Canberra via Jamesburg (IS IV A F-8)	GP-59469	VOC	99.69	.11	1
Canberra via Paumalu (COMSTAR & IS IV A F-6)	GW-58347	WDD	99.79	.01	1
Canberra via San Francisco (M3/COMPAC Cables)	GDA-58419	VDA	99.61	.19	2
	-58474	VDA	98.60	1.20	1
Canberra DSS-43 (Tidbinbilla)/Canberra	NCV-204	VDA	95.96	3.84	1
Cape Canaveral AFS (RTCS)/Houston (JSC)	GDA-58732	DDS	99.09	.71	1
Chilton (IRAS CC)	WUI-186	WDL	98.25	1.55	4

ORIGINAL PAGE IS
OF POOR QUALITY

Table I
Circuits That Failed To Meet Objectives (Cont'd)

TERMINATING STATION	CIRCUIT NUMBER	MODE OF SERVICE	AVAILABILITY PERCENT	PERCENT DIFFERENCE	CONSECUTIVE MONTHS
Dakar via Etam (IS IV A F-1)	GDA-58940	VDA	99.72	.08	12
Dakar via Etam (WESTAR & IS IV A F-1)	WUI-182	WDD	92.48	7.32	6
	-183	WDD	92.48	7.32	1
	-184	WDD	92.48	7.32	3
Darmstadt (ESRO)/Madrid	TGDR-1	TTY	99.39	.41	1
Downey (RI)/Houston (JSC)	GP-58560	VOC	99.32	.48	1
Dryden-Goldstone-Houston	GWAV-8092	VID	89.57	10.23	1
Huntsville-Kauai-Kennedy					
Dryden FRC (BTCF)/Houston (JSC)	GP-58984	VOC	97.09	2.71	2
	-58685	VOC	99.70	.10	1
	-58995	VOC	98.92	.88	1
Dryden FRC (BTCF)/Pasadena WCSC	7GT-353	TTY	99.54	.26	1
Goldstone	GDA-58582	VDA	99.53	.27	3
Goldstone/Pasadena WCSC	GDA-58270	VDA	99.50	.30	1
	-58271	VDA	99.45	.35	1
	7GT-339	TTY	97.79	2.01	3
Greenbelt (GSFC) & Houston (JSC)/White Sands (NGT)	NAX-8213	WDD	97.35	2.45	1
Houston (JSC)	GD-58539	DDS	99.74	.06	1
	-58923	TTY	99.78	.02	1
	-58924	TTY	99.78	.02	1
	-59112	TTY	99.47	.33	1
	-58597	VOC	99.69	.11	1
	N-66001	VOC	99.62	.18	2
	-66002	VOC	98.19	1.61	2
	-66003	VOC	94.19	5.61	2
Houston (JSC) via SATCOM	GNAV-8054	VOC	99.78	.02	2
	-8059	VOC	99.69	.11	1
Houston (JSC) via WESTAR	GDJS-800032	WDD	99.51	.29	1
Houston (JSC) & Washington D.C. (NASA Headquarters)	GP-59125	VOC	99.52	.28	1
Huntington Beach (MCD)/Pasadena WCSC	7GDP-89	VDA	99.26	.54	1
Huntsville (MSFC)/Houston (JSC)	GP-58838	VOC	99.51	.29	1
Kauai via Hawley-Sunset Beach (COMSTAR)	GDA-58423	VDA	99.52	.28	1
Kauai via San Francisco (M3 Cable)	GDA-58553	DDS	98.33	1.47	7
London Switching Center	GDA-58689	VDA	98.41	1.39	3
London Switching Center/Madrid via Algorta	DPLR-3	VDA	99.35	.45	3
London Switching Center/Madrid via Bilbao	DPLR-4	VDA	99.42	.38	2
Madrid via Etam (WESTAR & IS V F-3)	XPLR-1	VDA	98.85	.95	2
	E-1044	WDD	98.75	1.05	6
	WUI-188	WDD	99.25	.55	1
	-189	WDD	99.24	.56	1

ORIGINAL PAGE IS
OF POOR QUALITY

Table I

Circuits That Failed To Meet Objectives (Cont'd)

TERMINATING STATION	CIRCUIT NUMBER	MODE OF SERVICE	AVAILABILITY PERCENT	PERCENT DIFFERENCE	CONSECUTIVE MONTHS
Madrid via Andover-Aguimes (WESTAR & IS V F-2)	WUI-199	WDD	98.59	1.21	12
Madrid via TAT-5 Cable	GDA-58456 -58651 -58652	VDA DDS VDA	98.11 99.06 99.65	1.69 .74 .15	5 3 12
Madrid via TAT-6 Cable	GDA-58447 -59053	VDA DDS	99.60 99.71	.20 .09	2 3
Merritt Island	GDA-58477	VDA	99.67	.13	2
Merritt Island via WESTAR	WDMI-800024	WDD	99.51	.29	1
Moffett Field (ARC)/Pasadena WCSC	GDA-58268 -58269 -58379 -58632 GP-58226 NST-3013	DDS DDS DDS DDS VOC TTY	97.34 97.56 99.51 98.40 99.60 99.52	2.46 2.24 .29 1.40 .20 .28	2 4 4 2 1 2
Pasadena WCSC	GDA-58532 -58620 -58623 -58624 -58692 -58694	DDS VDA DDS DDS VDA VDA	99.37 99.79 99.61 99.78 95.28 99.79	.43 .01 .19 .02 4.52 .01	1 2 3 3 1 3
Pasadena WCSC via SATCOM	GWDD-5372	WDD	98.90	.90	6
Rendondo Beach (TRW CTV)	CD-58281	DDS	99.47	.33	1
Santiago via Etam (WESTAR & IS V F-3)	L-1329 WUI-190 -191	WDD WDD WDD	99.35 99.39 99.45	.45 .41 .35	1 1 1
Sioux Falls (EROS)/GSFC (Bldg 23)	GD-58420 TP-58421	DDS VOC	97.66 99.58	2.14 .22	1 1
Sunnyvale (AFSCF)/Pasadena WCSC	7GT-354	TTY	99.64	.16	2
Toulouse (CNES)/Madrid	TGTR-1	TTY	99.70	.10	1
Vandenberg AFB (WSMC)/Pasadena WCSC	GDA-58722	VDA	99.79	.01	1
Washington D.C. (ISCC)	74FD-7248	DAT	97.11	2.69	1
Washington (NASA HQS)	74GL-25296	VOC	85.51	14.29	2
Wessling (GSOCC)/Madrid	TGFR-1	TTY	99.39	.41	5
White Sands (TDRSS/NGT)	GDA-58578 -58890 -58891 GP-58487 -58618 -58619 -58887 -58888 -58889 GAX-8211	VDA VDA VDA VOC VOC VOC VOC VOC VOC WDD	99.46 99.50 99.15 98.36 99.49 99.53 98.89 98.80 98.63 97.35	.34 .30 .65 1.44 .31 .27 .91 1.00 1.17 2.45	1 1 1 1 2 1 1 2 1 1
White Sands (TDRSS/NGT) & Houston (JSC) Broadcast					

INDIVIDUAL CIRCUIT SUMMARIES

ASCENSION ISLAND via ETAM (IS IV A F-1) - GDA-58573.

The circuit experienced seven interruptions in April and it appears that six CMA's occurred during shuttle support. The trouble narratives indicate transmission level adjustments to restore service with the exception of the seventh CMA, on 18 April for 2:08 hours, due to a faulty wiring option.

BERMUDA ISLAND via ANDOVER (IS IV F-2) - GDA-58550.

There were six outages in April on -58550 with a combined lost time of 15:25 hours. One action was related to tracking problems at Bermuda, and the other five were 'open' conditions due to a mispatch, 'pulled' equalizers, or ITT-Washington related.

BOULDER (UNIV. OF COLORADO-LASP) - GDA-58992 -58993.

Both circuits had seven outages, respectively, in April and appear to be random disruptions. Three of the seven CMA's were a result of carrier failures along the GSFC/LASP link, another three indicated unable to pass data with no positive restorative actions, and the seventh CMA on 15 April for 0:46 hours due to a mud slide in West Virginia.

CHILTON (IRAS CC) - WUI-186.

The digital wideband data circuit experienced four breaks in service during April. One failure occurred during STS-6 support, 5 April 1530Z, but was unisolated. The other three failures were random. Total combined outage time was 12:38 hours which calculates to a mean-restore-time of 3.16 hours and is unfavorable in support of network operations.

DAKAR via ETAM (WESTAR & IS IVA) - WUI-182, 183R, & 184R.

Power problems at the Gandoul earth station (Dakar, Africa) on 6 April for 6 minutes affected all three circuits. In addition, all circuits were disrupted on 19 April for 5:40 hours due to a bad up-converter card. The 6 CMA's had a combined lost time of 17:18 hours.

DARMSTADT (ESRO)/MADRID - TGDR-1.

The circuit experienced five outages in April and all are related to carrier system problems. Four of those CMA's are distinctly related to the Madrid facility. The circuit has an April availability of 99.39% due to a total of 4:24 outage hours.

LONDON SWITCHING CENTER/MADRID via ALGORTA - DPLR-3.

The alternate voice/data circuit had 11 interruptions in April but were random and not related. This months availability for DP-3 is 99.35% due to 4:39 total outage hours.

ORIGINAL PAGE IS
OF POOR QUALITY

LONDON SWITCHING CENTER/MADRID via BILBAO -XPLR-1.

It appears that the outages on XP-1 are similar to those aforementioned on DP-3. There were 9 CMA's during April accruing 8:15 hours. A bad jumper in London on 12 April for 3:05 hours was restored after the circuit was reported open.

MADRID via ETAM (WESTAR & IS V) - E-1044.

The digital wideband data circuit linking GSFC/Madrid experienced 12 CMA's for 9:00 hours in April. It appears that 11 of these outages were in the European area and 9 of the 12 were Satcom/mux failures. The circuit has exhibited low availability statistics for the last 6 consecutive months.

MADRID via ETAM (WESTAR & IS V) - WUI-188R, 189R, & 199.

WUI-189 and -199 had seven outages in April while -188 experienced eight failures. It appears that all of the circuits were affected at a systems level because the restorative actions for each are similar. The most significant outage occurred 23 April at 2009Z for 3:47 hours due to satellite interference. Total lost time for the 22 CMA's is 21:00 hours.

MADRID via TAT-5 CABLE - GDA-58456.

There were 13 CMA's in April accounting for 13:38 hours. The circuits' April availability is 98.11% based on 720.0 operational hours. A foreign tone on the circuit 1 April incapacitated its operations 1:03 hours. Other outages indicate that noise and transmission levels are not within tolerance. Noise bursts on 29 April accrued 4:12 hours and another 3:05 hours on the 30th due to high levels from an adjacent channel in Greenhill, Rhode Island.

WHITE SANDS (TDRSS, PT) - GP-58887/8/9.

Each circuit logged 7 failures in April. It appears that the CMA's are random failures and not related. Noise is reported on 3 different incidents followed by a microwave failure (Greenbelt-Garden City) on 10 April for 38 minutes; a mud slide on the 15th for 2:52 hours; and a cable problem in Kansas on the 23rd for 2:32 hours. The combined lost time on these circuits was 26:31 hours.

ORIGINAL PAGE IS
OF POOR QUALITY

NASCOM FAILURE ANALYSIS PROGRAM

TROUBLE CATEGORIES

LEGEND

<u>CODE</u>	<u>DEFINITIONS (RFO'S) AND KEYWORDS ARE UNDERLINED FOR EACH CATEGORY</u>
A	<u>UNDETERMINED CAUSES</u> - N.T.F.'S, TEST OK'S, AND OTHER SHORT LOSSES (20 mins or less) THAT CLEARED <u>BEFORE</u> ISOLATION, OR CHECKOUT.
B	<u>LEASED SERVICES FAULT</u> (LOSS OF SERVICE DUE TO FAILURE OR DEGRADATION OF SERVICE CAUSED BY THE COMMERCIAL CARRIERS EQUIPMENT, SYSTEM OR FACILITIES).
C	ISOLATION/COORDINATION AND/OR COMMERCIAL CARRIER <u>"CONTROL" TIME</u> , (INCLUDES C.W.C.'S AND PERSONNEL ACTIONS/ERRORS).
D	LOSS OF SERVICE DUE TO <u>GOVERNMENT PERSONNEL FAULT</u> .
E	GOVERNMENT PROVIDED COMMUNICATIONS <u>EQUIPMENT FAULT</u> .
F	GOVERNMENT PROVIDED <u>FACILITIES FAULT</u> (OTHER THAN COMMUNICATIONS EQUIPMENT).
G	<u>RADIO FREQUENCY ANOMALIES</u> - FADING, SOLAR CONJUNCTION NOISE INTERFERENCE FROM OTHER SIGNALS OR OTHER "PROPAGATION DIFFICULTIES".
M	MAN-MADE <u>DAMAGE</u> TO OR LOSS OF FACILITIES OR EQUIPMENT BY OTHER THAN COMMUNICATIONS PERSONNEL.
N	NATURAL <u>(ACTS OF NATURE)</u> <u>DAMAGE</u> TO OR LOSS OF EQUIPMENT OR FACILITIES.
P	FAILURE OF STATION OR FACILITIES <u>ELECTRICAL POWER</u> .

<u>CODE</u>	<u>OUTAGE CHARGED</u>
A, B, C	TO THE RESPONSIBLE COMMERCIAL CARRIER: FULL CHARGE FOR PERFORMANCE EVALUATION AND REBATE/CREDIT WHEN APPLICABLE.
G, M, N, & P	TO THE RESPONSIBLE COMMERCIAL CARRIER FOR REBATE CREDIT ONLY.
(A), D, E, F, & (P)	FOR NASCOM PERFORMANCE ONLY.

NOTE: A & P MAY BE EITHER COMMERCIAL CARRIER OR NASCOM FAULTS DEPENDING ON CIRCUMSTANCES.

TABLE II

CIRCUITS WITH LOST TIME BY TROUBLE CATEGORY WITH SCHEDULED OPERATING HOURS
AVAILABILITY PERCENT AND MEAN TIME TO RESTORE

TERMINATING STATION	CIRCUIT NUMBER	MODE OF SVC	TROUBLE CATEGORIES LOST TIME AND EVENTS										SCHED. OP. HOURS	AVAILABILITY/MTTRs	
			A	B	C	D	E	F	G	H	I	P	TOTAL OUTAGE		
Ascension Island via PSN (IS IV A F-1)	GIA-58573	VIA	-	1:43	3:15	4	-	-	-	-	-	-	4:58	720	99.31 :4.3
Ascension Island via Autovar (WESTAR/IS V F-2)	WII-175	WID	-	-	-	-	2:27	3:21	-	-	-	-	5:48	720	99.19 :1.56
Ascension Island via Autovar (WESTAR/IS V F-2)	-197-R	WID	-	-	-	-	-	-	3:12	-	-	-	3:12	720	99.36 :1.12
Ascension Island via Autovar (IS IV F-2)	-198-R	WID	-	-	3:18	-	-	-	1:12	-	-	-	3:50	720	99.47 :1.17
Ascension Island via Autovar (IS IV F-2)	GIA-58550	VIA	-	1:21	14:04	4	-	-	-	-	-	-	15:25	720	97.86 :2.14
Ascension Island via Autovar (IS IV F-2)	-58551	VIA	-	3:1	-	-	-	-	-	-	-	-	3:1	720	99.93 :31
Ascension Island via Autovar (IS IV F-2)	-58552	VIA	-	12:09	-	4	-	-	-	-	-	-	12:09	720	98.31 :1.02
Ascension Island via Autovar (WESTAR 6 IS IV F-2)	WII-194	WID	-	1:42	-	-	-	-	-	-	-	-	1:42	720	99.76 :1.42
Ascension Island via Autovar (WESTAR 6 IS IV F-2)	GIA-59181	VIA	-	4:8	-	2	-	-	-	-	-	-	4:8	720	99.89 :2.76
Ascension Island via Autovar (IS IV F-2)	-59184	VIA	-	3:1	-	-	-	-	-	-	-	-	3:1	720	99.92 :31
Ascension Island via Autovar (IS IV F-2)	GIA-58460	VIA	-	6:44	-	3	-	-	-	-	-	-	6:44	706	99.60 :2.05
Ascension Island via Autovar (IS IV F-2)	-59211	VIA	10:1	4:12	-	-	-	-	-	-	-	-	4:15	720	99.38 :1.47
Ascension Island via Autovar (IS IV F-2)	PPR-26679	VIA	-	46:20	-	1	-	-	-	-	-	-	46:20	720	99.56 :0.50
Ascension Island via Autovar (IS IV F-2)	GIA-59179	VIA	-	1:19	2:20	-	-	-	-	-	-	-	3:39	706	99.91 :7.40

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE II

CIRCUITS WITH LOST TIME BY TROUBLE CATEGORY WITH SCHEDULED OPERATING HOURS
AVAILABILITY PERCENT AND MEAN TIME TO RESTORE (CONT'D)

TERMINATION STATION	CIRCUIT NUMBER	ROUTE SEG.	A	B	C	D	E	F	G	H	I	P	TOTAL OUTAGE	SCHED- ED OP- HOURS	AVAIL- ABILITY/ PERCENT			
Woolsey (Hub of Globe-ASP)	GIA-58492	DIS	:1:12	:12:28	:1:11	-	-	-	-	-	-	:46	-	:53:17	:720	97.8%		
	-58493	DIS	:1:12	:12:28	:1:10	:2	-	-	-	-	-	:46	-	:53:27	:720	97.8%		
Califera via Lumber (IS IV A-F-6)	GIA-58504	DIS	-	-	-	-	-	-	-	-	-	-	-	:01	:1:14	:720	99.9%	
	-58505	VIA	-	-	-	-	-	-	-	-	-	-	-	0	0	:720	100%	
	-58506	VIA	-	-	-	-	-	-	-	-	-	-	-	:01	:2	:720	99.9%	
	-58521	VIA	-	-	-	-	-	-	-	-	-	-	-	:01	:4	:720	99.9%	
	GP-59468	VIC	-	-	-	-	-	-	-	-	-	-	-	-	:44	:720	99.9%	
	-59469	VIC	-	-	-	-	-	-	-	-	-	-	-	-	:44	:720	99.9%	
Califera via Pumalito (CONSTAR & IS IV A F-6)	GIA-59210	WID	-	:14	-	-	-	-	-	-	-	-	-	:13	:27	:720	99.9%	
	-59346	WID	-	-	-	-	-	-	-	-	-	-	-	-	:1	:2	:720	99.9%
	-59347	WID	:18	:52	:1	-	-	-	-	-	-	-	-	:10	:10	:720	99.9%	
	-59348	WID	-	:17	-	-	-	-	-	-	-	-	-	-	:1	:10	:720	99.9%
Califera via Vancouver (Compac Cable)	GIA-59531	DIS	-	-	-	-	-	-	-	-	-	-	-	-	:30	:720	99.9%	
Califera via San Francisco (H2/Compac cables)	GIA-59548	DIS	:05	-	-	-	-	-	-	-	-	-	-	:53	:720	99.9%		
Califera via San Francisco (H1 & Compac cables)	GIA-59619	VIA	-	:2:48	-	-	-	-	-	-	-	-	-	:2:48	:720	99.6%		
					-	-	-	-	-	-	-	-	-	-	-	:2	:720	100%

TABLE II

CIRCUITS WITH LOST TIME BY TROUBLE CATEGORY WITH SCHEDULED OPERATING HOURS
AVAILABILITY PERCENT AND MEAN TIME TO RESTORE (CONT'D)

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE II

CIRCUITS WITH LOST TIME BY TROUBLE CATEGORY WITH SCHEDULED OPERATING HOURS

TABLE II

CIRCUITS WITH LOST TIME BY TROUBLE CATEGORY WITH SCHEDULED OPERATING HOURS

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE II

CIRCUITS WITH LOST TIME BY TROUBLE CATEGORY WITH SCHEDULED OPERATING HOURS
AVAILABILITY PERCENT AND MEAN TIME TO RESTORE (CONT'D)

TERMINATING STATION	CIRCUIT NUMBER	MAIN OFF. SWC	A	B	C	D	E	F	G	H	I	N	P	TOTAL OUTAGE	SCHED UP HOURS	WAD- ABILITY/ NET HRS	
Goldstone / Pasadena MSG (Cont'd.)	60A-58474	VIA	-	-	13:57	-	-	-	-	-	-	-	-	3:57	720	99.61 13:57	
	60T-339	TTV	-	-	15:55	-	-	-	-	-	-	-	-	6:55	720	97.78 15:55	
Overhead (GSPEC) & Bottom (LSC) / White Sand (MSG)	MAX-8211-T	WDC	4:48	-	-	-	-	-	-	-	-	-	-	4:48	712	97.45 0:48	
Bottom via San Francisco (MSG/Transpac 1 Cables)	60A-58470	VDA	-	-	-	-	-	-	-	-	-	-	-	-	1:15	720	99.81 1:15
Bottom via San Francisco (MSG/Transpac 1 Cables)	60A-58404	VDA	-	-	-	-	-	-	-	-	-	-	-	-	1:15	720	99.81 1:15
Bottom (MSG)	61B-58539	WDS	-	-	-	-	-	-	-	-	-	1:52	-	1:52	720	99.74 0:52	
	-58921	TTV	-	-	-	-	-	-	-	-	-	1:35	-	1:35	720	99.78 1:35	
	-58926	TTV	-	-	1:47	-	-	-	-	-	-	1:35	-	1:35	720	99.47 1:35	
	-58412	TTV	-	2	-	-	-	-	-	-	-	-	-	-	3:47	720	99.47 1:35
	GP-58597	WDC	-	-	-	-	-	-	-	-	-	2:12	-	2:12	720	99.69 2:12	
	N-66001	WDC	-	2:45	-	-	-	-	-	-	-	-	-	-	2:45	720	99.62 2:45
	-66402	WDC	-	13:01	2	-	-	-	-	-	-	-	-	-	13:01	720	98.19 6:30
	-66403	WDC	-	41:48	1	-	-	-	-	-	-	-	-	-	41:48	720	94.49 13:56
Bottom (MSG) via Satcom	GAVI-80449	VIA	-	-	-	-	-	-	-	-	-	10	-	-	700	99.98 10	

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE II

CIRCUITS WITH LOST TIME BY TROUBLE CATEGORY WITH SCHEDULED OPERATING HOURS
AVAILABILITY PERCENT AND MEAN TIME TO RESTORE (CONT'D)

TERMINATING STATION	CIRCUIT	TYPE	TROUBLE CATEGORIES						MEAN TIME	MEAN TIME	DEF. OUTAGE	DEF. OUTAGE	AVAILABILITY	
			A	B	C	D	E	F						
Bethelton (ISC) via MARTIN (Cont'd.)	DAVID-MARY	SW	:20	-	-	-	-	-	-	-	-	2:40	99.9%	
	DAV-MARY	VIA	-	-	-	-	-	-	-	-	-	-	2:40	99.9%
	DAV-MARY	WH	-	1:14	-	-	-	-	-	-	-	1:14	99.9%	
	-R1519	WH	-	2:11	-	-	-	-	-	-	-	2:11	99.6%	
	-R195	WH	-	:09	-	-	-	-	-	-	-	:09	100	
	-R196	WH	-	:13	-	-	-	-	-	-	-	:13	99.9%	
	-R197	WH	-	2	-	-	-	-	-	-	-	2	100	
	-R198	WH	-	:09	-	-	-	-	-	-	-	:09	100	
	-R199	WH	-	:09	-	-	-	-	-	-	-	:09	100	
	-R200	WH	-	:09	-	-	-	-	-	-	-	:09	100	
Bethelton (ISC) via M-STAR	CHS-BKDN12-T	WBD	1:13	-	-	-	-	-	-	-	-	3:13	99.5%	
Bethelton (ISC) & Marsh- Hill (NASA HQ)	CP-59125	VOC	-	2	-	-	-	-	-	-	-	2	100	
Bethelton (ISC) / Kennedy Space Center (KSC) via WESTAR	CP-58252-T	DAT	-	-	3:28	-	-	-	-	-	-	3:28	99.52	
Bethelton Beach (HBN) / Pasadena MCSC	710P-89	VDA	-	5:20	-	-	-	-	-	-	-	5:20	99.26	
Brentsville (MSFC) / Bethelton (ISC)	CP-58816	WIC	-	-	3:12	-	-	-	-	-	-	3:12	99.51	
													3:12	99.51

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE II

CIRCUITS WITH LOST TIME BY TROUBLE CATEGORY WITH SCHEDULED OPERATING HOURS AVAILABILITY PERCENT AND MEAN TIME TO RESTORE (CONT'D)

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE II

1. CIRCUITS WITH LOST TIME BY TROUBLE CATEGORY WITH SCHEDULED OPERATING HOURS
2. AVAILABILITY PERCENT AND MEAN TIME TO RESTORE (CONT'D)

ORIGINAL PAGE IS
OF POOR QUALITY

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE III

AVAILABILITY PERCENT AND MEAN TIME TO RESTORE (CONT'D)

TIME/DATE/STATION	PHONE NO. SER.	TIME/DATE/1000'S, 100'S, AND 10'S										WAVE- LENGTH MEASURED	
		A	B	C	D	E	F	G	H	I	J		
WICHITA FALLS (AMC)/ Providence WESC (Cont.)	11AM-58269	DNS	-	0:15	-	-	-	-	-	0:15	1:15	915.546	
	-58179	DNS	1:10	2	-	-	-	-	-	1:10	1:15	915.546	
	-58412	DNS	-	0:10	1	-	-	-	-	0:10	1:10	915.546	
	11P-58226	VPA	-	-	2:12	-	-	-	-	2:12	2:20	915.546	
	11P-58111	TTV	-	1:26	2	-	-	-	-	1:26	1:20	915.546	
	12P-58146	DNS	-	-	-	-	-	-	-	22	-	915.546	
	12P-58120	DNS	-	-	1:10	1	-	-	-	-	1:10	915.546	
	6DA-58235	VPA	-	-	-	-	-	-	-	2:16	-	915.546	
	-58490	DNS	-	1:14	1	-	-	-	-	-	1:14	915.546	
	-58512	DNS	-	1:49	1	-	-	-	-	3:42	-	915.546	
	-58420	VPA	-	1:14	1	-	-	-	-	1:16	-	915.546	
	-58421	DNS	-	1:12	2	-	-	-	-	1:16	-	915.546	
	-58424	DNS	:07	1:14	1	-	-	-	-	1:16	-	915.546	
	-58492	VPA	:20	2:14	2	9:50	4	-	-	-	13:57	720	915.546

TABLE II

CIRCUITS WITH LOST TIME BY TROUBLE CATEGORY WITH SCHEDULED OPERATING HOURS

ORIGINAL PAGE IS
OF POOR QUALITY

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE IX

CIRCUITS WITH LOST TIME BY TROUBLE CATEGORY WITH SCHEDULED OPERATING HOURS
AVAILABILITY PERCENT AND MEAN TIME TO RESTORE (CONT'D)

TROUBLENAMING STATION	CIRCUIT NUMBER	ROUTING INFO SWT	SCHEDULED CATEGORIES						COST	LSTD	AVAILABILITY PERCENT	MEAN TIME TO RESTORE
			A	B	C	D	E	F				
Connallyte (AESCE) V1A 5. V1C101	AM01-8071	WWD	-	1:12	-	-	-	-	-	1:12	1:12	99.81 :16
Connallyte (AESCE) / Benton (DISC)	GP-59199	VOC	-	-	1:00	-	-	-	-	1:00	1:20	99.80 :16
Connallyte (AESCE) / Paducah (MSC)	113-154	TRV	-	2:15	-	-	-	-	-	2:15	1:20	99.64 :15
Connallyte (AESCE) / Paducah (MSC)	TC1K-1	TRV	-	2:00	:08	-	-	-	-	2:00	1:20	99.70 :16
XPMT-101	VDA	-	:08	:06	-	-	-	-	-	1:22	1:30	99.81 :16
-102	VDA	-	:18	:12	-	-	-	-	-	4	1:20	:12
Vandergrift AFN (NSNM) / Paducah (MSC)	GDA-58722	VDA	:45	:45	-	-	-	-	-	:50	1:20	99.80 :17
	GP-58248	VOC	:47	-	-	-	-	-	-	3	1:30	1:17
	-58790	VOC	:47	-	-	-	-	-	-	2	1:20	99.79 :16
Villafranca (V11SPA) / R.L.D.1d	WPKV-1	VDA	-	:18	:32	-	-	-	-	:47	1:20	99.89 :17
	-2	VDA	-	:18	:32	-	-	-	-	4	1:20	99.89 :17
	-3	VDA	-	-	1	2	-	-	-	3	1:20	99.88 :17
	-4	VDA	-	-	:24	-	-	-	-	1	1:24	99.87 :24
Waltlops 1s Land	GBA-58401	VDA	-	:21	-	-	-	-	-	:24	1:20	99.87 :24

TABLE II

CIRCUITS WITH LOST TIME BY TROUBLE CATEGORY WITH SCHEDULED OPERATING HOURS
AVAILABILITY PERCENT AND MEAN TIME TO RESTORE (CONT'D)

ORIGINAL PAGE IS
OF POOR QUALITY

IDENTIFICATION - CIRCUIT NUMBER	CIRCUIT NUMBER	INDIVIDUAL CIRCUITS LOST TIME												MEAN TIME TO RESTORE	AVAILABILITY PERCENT	
		00	01	02	03	04	05	06	07	08	09	0A	0B			
Walters, E. J. and (Cont'd.)	GBA-58527	VIA	-	1:24	-	-	-	-	-	-	-	-	-	1:24	720	99.95
Walters, E. J. and (Cont'd.)	GBA-58528	DAT	-	-	20:47	-	-	-	-	-	-	-	-	20:47	720	97.43
Washington D.C. (USCC)	7441-7248	VIA	-	-	-	1	-	-	-	-	-	-	-	-	720	99.87
Washington D.C. (NASA Headquarters)	7441-21294-T	VIA	-	104:21	-	-	-	-	-	-	-	-	-	104:21	720	97.50
Washington, D.C./Marshall Space Flight Center/Marshall	7441-21294-T	TTV	-	4:16	1:08	-	-	-	-	-	-	-	-	4:24	720	99.19
White Sands (THSS/MET)	610-58578	VIA	-	-	-	-	-	-	-	-	-	-	-	1:54	720	99.56
White Sands (THSS/MET)	610-58890	VIA	-	-	-	-	-	-	-	-	-	-	-	1:54	720	99.54
White Sands (THSS/MET)	610-58891	VIA	-	1:38	1:55	-	-	-	-	-	-	-	-	1:35	720	99.50
White Sands (THSS/MET)	610-58487	VIA	1:42	1:14	6:28	-	-	-	-	-	-	-	-	2	720	94.84
White Sands (THSS/MET)	610-58618	VOC	-	1:16	-	-	-	-	-	-	-	-	-	3:35	720	99.15
White Sands (THSS/MET)	610-58619	VOC	-	-	-	-	-	-	-	-	-	-	-	2	720	91.32
White Sands (THSS/MET)	610-58887	VOC	-	1:25	1:11	-	-	-	-	-	-	-	-	3:26	720	99.49
White Sands (THSS/MET)	610-58888	VOC	-	4:02	1:11	-	-	-	-	-	-	-	-	3:26	720	98.36
White Sands (THSS/MET)	610-58889	VOC	-	5:19	1:11	-	-	-	-	-	-	-	-	3:26	720	97.58
White Sands (THSS/MET)	610-58194	VOC	-	1:14	-	-	-	-	-	-	-	-	-	3:40	720	99.49
White Sands (THSS/MET)	610-58195	VOC	-	1	-	-	-	-	-	-	-	-	-	3:40	720	91.11

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE II

CIRCUITS WITH LOST TIME BY TROUBLE CATEGORY WITH SCHEDULED OPERATING HOURS
AVAILABILITY PERCENT AND MEAN TIME TO RESTORE (CONT'D)

TERMINATING STATION	CIRCUIT NUMBER	TERM. TO SVC	TROUBLE CATEGORIES						SCHED. OPER. HOURS			AVAILABILITY PERCENT		
			A	B	C	D	E	F	G	H	I	P	Q	R
White Sands (NET) / Oshkosh (NET) Broadcast	6AX-6211-T	W:14	-	-	-	-	-	-	-	-	-	W:14	1:12	97.1%
White Sands (TOMS/MAT) / Benton (NET) via SAC/NET	6AX-6211-T	W:14	-	-	-	-	-	-	-	-	-	W:14	1:13	99.9%
White Sands (TOMS/MAT) / Benton (NET) via SAC/NET	61P-59654	W:14	-	-	-	-	-	-	-	-	-	W:14	1:13	99.9%
White Sands (TOMS) / Benton (NET)	61P-59654	W:14	-	-	-	-	-	-	-	-	-	W:14	1:13	99.9%
White Sands (TOMS) / Benton (NET)	-59644	W:14	-	-	-	-	-	-	-	-	-	W:14	1:13	99.9%
White Sands (TOMS) / Oshkosh (NET)	NET-6411	RTV	1:47	1:19	-	-	-	-	-	-	-	1:26	1:20	99.9%
White Sands (TOMS) / Oshkosh (NET)	NET-6411	VIA	1:47	-	-	-	-	-	-	-	-	1:47	1:20	99.9%
White Sands (TOMS) / Oshkosh (NET)	-6112	VIA	1:47	-	-	-	-	-	-	-	-	1:47	1:20	99.9%

ORIGINAL PAGE IS
OF POOR QUALITY

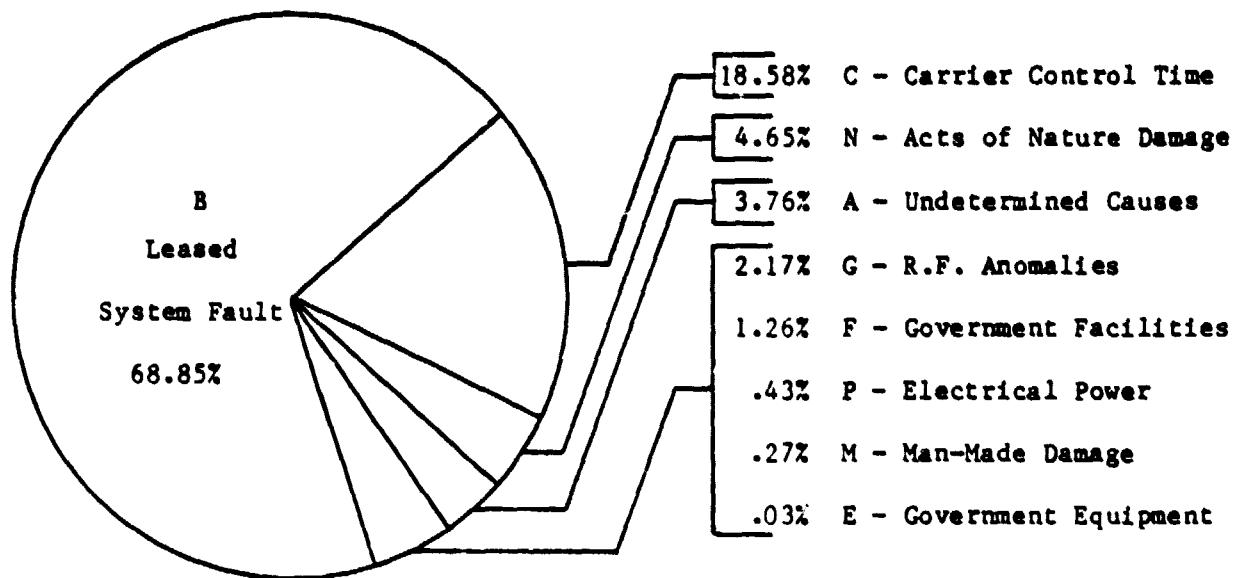


Figure 3A. Percentage of Lost Time by Trouble Category
for the Current Month

Figure 3A: DATA DISCUSSION

Figure 3A above shows that Commercial Carrier Systems Faults (B) accounted for 68.85% of all network lost time for April followed by 18.58% for Carrier Control Time (C). The significant increase from last month was category B, up 52%; and the greatest decrease being Government Equipment Fault (E), from 5.17% to 0.03%. Acts of Nature Damage (N) is 4.65% and in large is due to the mud slide 15 April at Pemsboro, West Virginia.

Table IIIA: SUMMARY

Table IIIA is presented showing the outage hours for all categories in April and their respective totals. There were 1113:47 outage hours and a calculated 99.75% availability. The Systems Fault (B) category for all modes accrued 760:49 hours followed by Carrier Control Time (C) of 206:57 hours. The network video circuits exhibited a low availability for April (97.9%) due to noise on the F2 satellite, 27 April.

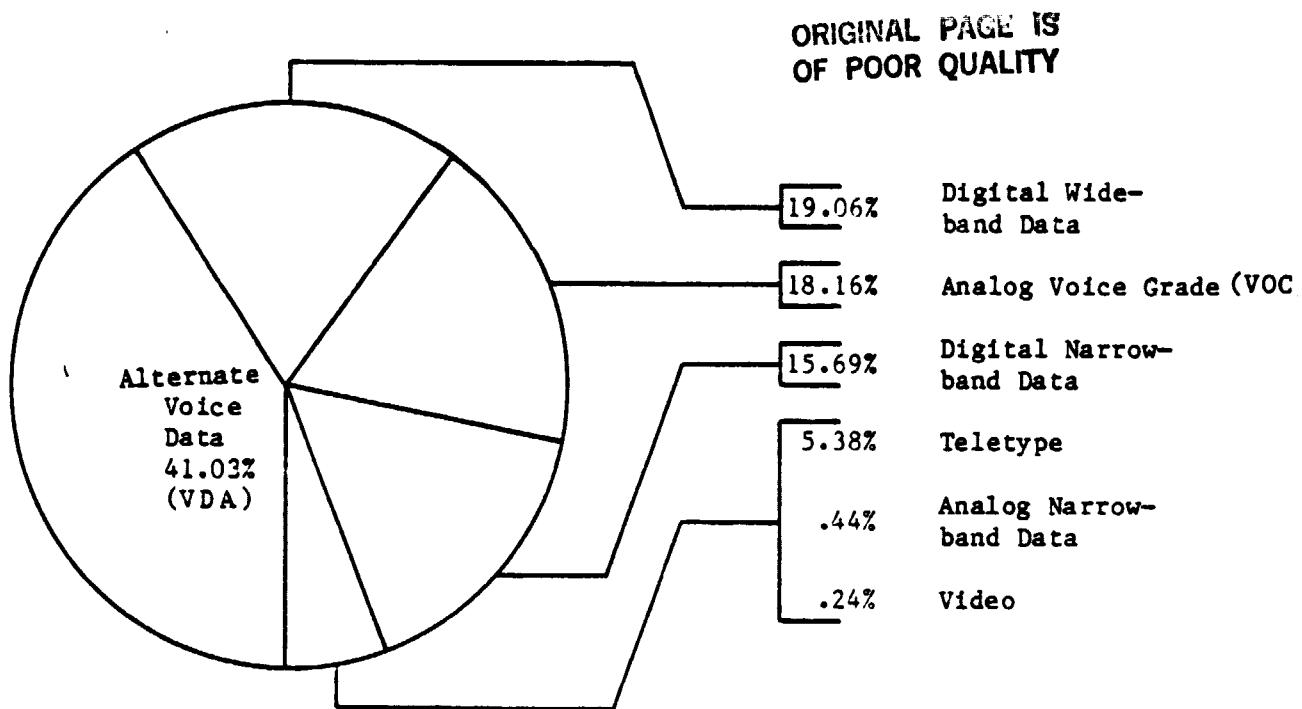


Figure 3B. Percentage of CMA's By Mode of Service
for the Current Month

Figure 3B: DATA DISCUSSION

Figure 3B above shows the breakdown percentages by mode of service for April. The Alternate Voice Data mode contributed 41.03% of all interruptions documented followed by 19.06% on Digital Wideband Data circuits. The number of CMA's for digital wideband circuits increased substantially from March (4.91%).

Table IIIB: SUMMARY

Table IIIB presents the number of interruptions for each mode of service and is cross referenced to the individual trouble categories. There were 446 CMA's and a mean-restore-time of 2.50 hours on 188 circuits. The mean-restore-time for the video mode is 75.12 hours followed by 10.55 hours on Analog Narrowband Data circuits. The network MTTR (2.50 hours) is a significant improvement from March (6.48 hours) and is better than the established 24 month baseline of 2.92 hours.

Table III

Circuits With Lost Time By Trouble Category With Scheduled Operating Hours,
Availability Percent and Mean-Time-To-Restore

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 34

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AVAILABILITY	PERCENT	MEAN TIME TO RESTORE	AVAILABILITY	PERCENT	MEAN TIME TO RESTORE	
A. <i>Uninterrupted</i>	467	1567	1567	1567	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	100.00	100.00	100.00	100.00	100.00	100.00		
A. <i>Planned Downtime</i>	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800.00	800.00	800.00	800.00	800.00	800.00
Total	1667	21107	21107	21107	1000	1000	100.00	100.00	100.00	100.00	100.00	100.00																					
Facilities	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000.00	000.00	000.00	000.00	000.00	000.00		
A. <i>Unintended</i>	234057	234057	234057	234057	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000.00	000.00	000.00	000.00	000.00	000.00
A. <i>Unintended</i>	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000.00	000.00	000.00	000.00	000.00	000.00
D. <i>Planned Downtime</i>	321.25	446.03	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100.00	100.00	100.00	100.00	100.00	100.00	
B. <i>With Data</i>	246.32	166.15	156.15	156.15	000	2027	14102	23124	11330	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000.00	000.00	000.00	000.00	000.00	000.00	
V. <i>With</i>	000	75.07	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000.00	000.00	000.00	000.00	000.00	000.00	
NET TOTALS	4165.3	7660.0	2064.0	2064.0	000	000.00	000.00	000.00	000.00	000.00	000.00																						

TABLE 35

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AVAILABILITY	PERCENT	MEAN TIME TO RESTORE	AVAILABILITY	PERCENT	MEAN TIME TO RESTORE
A. <i>Uninterrupted</i>	9	48	57	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
A. <i>Planned Downtime</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	1	15	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0								
Facilities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
A. <i>Unintended</i>	1	40	19	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B. <i>With Data</i>	9	12	17	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B. <i>With Data</i>	1	21	22	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
V. <i>With</i>	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NET TOTALS	13	212	112	0	7	4	0	1	1	22	0	0	0	0	0																	

TABLE IV
NASCOM NETWORK CIRCUIT AVAILABILITIES

TERMINATING STATION	CIRCUIT NUMBER	NOB OF SVC	MAY 1982	JUN 1982	JUL 1982	AUG 1982	SEP 1982	OCT 1982	NOV 1982	DEC 1982	JAN 1983	FEB 1983	MAR 1983	APR 1983	MAY 1983	JUN 1983	LONG TERM AVG%
Albuquerque (PMI)/Houston (JSC)	GP-58638	VOC	100.00	100.00	0	0	0	0	0	0	0	0	0	0	0	0	100.00
Ames AFB	74PL-26474	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Ann Arbor (Univ of Michigan)/ GMRC (Bldg 23)	CD-59044	VOC	100.00	100.00	96.77	99.75	100.00	100.00	100.00	100.00	100.00	100.00	99.83	100.00	99.70		
Arlington (PCA)	74GL-1561	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Ascension Island via Kttn (IS IV A P-1)	CDN-58572	VIA	100.00	99.91	98.97	0	0	100.00	100.00	100.00	99.95	100.00	99.65	100.00	99.85		
	-58573	VIA	99.70	99.32	99.85	98.44	99.68	99.37	99.83	99.94	99.74	100.00	99.69	99.31	99.57		
	-58576	VIA	99.93	99.55	99.54	99.77	99.89	100.00	99.77	100.00	99.83	100.00	99.69	100.00	99.83		
Ascension Island via Andover (WESTAR 6 IS V P-2)	WJI-175	WJD	99.43	99.72	99.20	99.91	99.99	99.65	99.95	99.36	99.82	99.53	99.69	99.19	99.65		
	-197-R	WJD	0	99.64	99.71	0	0	99.83	100.00	100.00	99.88	99.69	99.56	99.81			
	-198-R	WJD	0	99.85	99.71	0	0	99.78	99.98	100.00	99.95	99.85	99.69	99.47	99.81		
Austin (Univ of Texas)	GP-58950	TTV	100.00	100.00	100.00	100.00	100.00	96.92	99.43	100.00	0	0	0	0	0	0	99.59
Baltimore (JHU)	74GD-436	DAT	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0	0	0	0	100.00
Barbuda Island via Andover (IS V P-2)	CDN-58550	VIA	99.94	99.84	99.14	99.85	99.98	99.85	99.72	100.00	99.94	99.79	99.71	97.86	99.55		
	-58551	VIA	100.00	99.93	99.68	99.98	99.99	99.44	99.72	100.00	99.98	99.41	100.00	99.93	99.84		
	-58552	VIA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	98.31
Barbuda Island via Andover (WESTAR 6 IS V P-2)	WJI-194	WJD	100.00	99.92	99.60	99.63	100.00	99.99	99.94	100.00	99.86	100.00	99.29	99.76	99.83		
	-195-R	WJD	0	99.91	100.00	0	0	99.99	99.97	100.00	99.86	99.02	100.00	100.00	99.86		
	-196-R	WJD	0	99.91	99.99	0	0	99.99	99.82	100.00	99.86	99.05	100.00	100.00	99.85		

NOTE: 0 = Unobtainable data or the circuit was deactivated.

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TERMINATING STATION	CIRCUIT NUMBER	HOLD	OP	MAY	JUN.	AUG.	SEP.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	JUN.	LONG	
																LONG	
Bermuda via Jacksonville	GD-59183	VDA	100.00	99.53	100.00	98.53	100.00	99.87	99.66	100.00	99.89	99.94	99.94	99.89	99.77		
Subcable	-59184	VDA	100.00	99.53	99.79	100.00	100.00	99.43	100.00	99.62	100.00	99.68	99.92	99.93			
Bermuda Island via Manahawkin	GDN-58440	VDA	100.00	99.72	100.00	100.00	99.70	99.91	99.53	100.00	100.00	99.81	99.96	99.91			
Subcable	-58441	VDA	99.56	99.95	100.00	100.00	99.95	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.96	
Bermuda Island via Mill Village	GDN-58585	VDA	100.00	99.65	100.00	0	0	99.84	100.00	100.00	100.00	99.99	100.00	100.00	100.00	99.95	
Subcable	-58586	VDA	0	98.59	100.00	0	0	100.00	99.80	100.00	98.72	99.62	100.00	100.00	100.00	99.64	
Bermuda Island/Perritt Island	GDN-58587	VDA	0	99.65	100.00	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.96	
via Mill Village Subcable																	
Bermuda/Cape XV via Manahawkin	GP-58360	VDC	0	0	0	0	0	100.00	100.00	100.00	100.00	0	100.00	100.00	100.00	100.00	
Subcable	-58368	VDC	100.00	100.00	100.00	0	0	0	0	0	0	0	0	0	0	0	100.00
Bethesda (Dr. Beagle)	74P-26479	VDC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	93.56	99.46
Birmingham (Aston Univ)/London	LA-49001	TTV	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Botswana via TAT-6 Cable	GDN-54679	VDA	0	99.81	100.00	0	0	99.38	99.89	98.81	99.95	100.00	100.00	99.91	99.91	99.75	
6 105	-54680	VDA	0	100.00	100.00	0	0	100.00	100.00	99.81	100.00	100.00	100.00	100.00	100.00	100.00	
Boulder (Univ of Colorado) & El	GD-59144	DHF	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
Segundo (SLC)/Palo Alto (SLC)																	

ORIGINAL PAGE IS
OF POOR QUALITY

NOTE: 0 = undetectable data or the circuit was deactivated.

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

ORIGINAL PAGE IS
OF POOR QUALITY

TERMINATING STATION	CIRCUIT NUMBER	MODE OF TRANSMISSION	MAY 1982	JUN. 1982	JUL. 1982	AGS. 1982	SEP. 1982	OCT. 1982	NOV. 1982	DEC. 1982	JAN. 1983	FEB. 1983	MAR. 1983	APR. 1983	JUN. 1983	LONG TERM AVG%
Boulder (Univ of Colo-LASP)	QDA-58992	DTS	99.91	98.93	99.37	99.89	99.76	99.97	98.90	99.91	100.00	99.65	99.38	97.83	99.46	
	-58993	DTS	99.95	98.93	99.19	99.36	99.70	99.97	99.06	99.91	100.00	99.68	99.58	97.95	99.48	
	-58994	DTS	100.00	99.60	99.81	99.91	100.00	99.97	100.00	100.00	100.00	99.98	99.84	100.00	99.92	
Boulder (Univ of Colo-LASP) / Pasadena WERC	GP-59991	TTY	99.81	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.99
Bracknell (Metco Ctr)/London	GP-59368	VOC	100.00	0	0	0	0	0	0	0	0	0	0	0	0	100.00
Cambridge (C.S. Draper Lab)	GP-59129	VOC	100.00	99.95	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Cambridge (MIT/SEC (Bldg 22))	GD-58422	DAT	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Cambridge (Harvard Univ & SD) & Oxford (Harmon Field)	GD-58645	DAT	100.00	100.00	100.00	100.00	100.00	99.84	100.00	100.00	99.24	100.00	0	0	99.91	
Cambridge (Instruments Corp) / Houston (JSC)	GD-58659	DAT	0	0	0	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Cambridge (SO)	NET-31174-T	TTY	100.00	100.00	0	0	0	0	0	0	0	0	0	0	0	100.00
	-1308	TTY	100.00	100.00	99.57	99.56	100.00	100.00	0	0	0	0	0	0	0	99.86
Caricra via Jassenburg (IS IV A F-8)	GD-58468	TTY	0	0	0	0	0	100.00	99.97	100.00	100.00	90.44	100.00	100.00	100.00	99.77
	QDA-58504	VDA	99.44	99.09	99.41	98.67	99.22	98.35	97.88	99.56	98.05	99.48	99.95	99.97	99.09	
	-58506	VDA	0	99.46	99.84	0	0	99.78	98.96	98.13	96.69	99.48	99.94	99.87	99.13	
	-58521	VDA	99.53	98.81	98.20	96.97	97.01	97.58	97.49	99.53	99.12	99.17	99.64	99.97	98.59	
	GP-58629	VOC	0	0	0	0	0	96.34	99.82	0	0	0	0	0	98.08	
	-58630	VOC	0	0	0	0	0	96.34	99.15	0	0	0	0	0	97.75	

NOTE: 0 = unobtainable data or the circuit was deactivated.

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

ORIGINAL PAGE IS
OF POOR QUALITY
| TRANSMITTING STATION | CIRCUIT NUMBER | MODE | OP SMC | | | JUN. 1982 | | | JUL. 1982 | | | AUG. 1982 | | | OCT. 1982 | | | NOV. 1982 | | | DEC. 1982 | | | JAN. 1983 | | | FEB. 1983 | | | MAR. 1983 | | | APR. 1983 | | | MAY 1983 | | | JUN. 1983 | | | JUL. 1983 | | | AUG. 1983 | | | SEP. 1983 | | | OCT. 1983 | | | NOV. 1983 | | | DEC. 1983 | | | JAN. 1984 | | | FEB. 1984 | | | MAR. 1984 | | | APR. 1984 | | | MAY 1984 | | | JUN. 1984 | | | JUL. 1984 | | | AUG. 1984 | | | SEP. 1984 | | | OCT. 1984 | | | NOV. 1984 | | | DEC. 1984 | | | JAN. 1985 | | | FEB. 1985 | | | MAR. 1985 | | | APR. 1985 | | | MAY 1985 | | | JUN. 1985 | | | JUL. 1985 | | | AUG. 1985 | | | SEP. 1985 | | | OCT. 1985 | | | NOV. 1985 | | | DEC. 1985 | | | JAN. 1986 | | | FEB. 1986 | | | MAR. 1986 | | | APR. 1986 | | | MAY 1986 | | | JUN. 1986 | | | JUL. 1986 | | | AUG. 1986 | | | SEP. 1986 | | | OCT. 1986 | | | NOV. 1986 | | | DEC. 1986 | | | JAN. 1987 | | | FEB. 1987 | | | MAR. 1987 | | | APR. 1987 | | | MAY 1987 | | | JUN. 1987 | | | JUL. 1987 | | | AUG. 1987 | | | SEP. 1987 | | | OCT. 1987 | | | NOV. 1987 | | | DEC. 1987 | | | JAN. 1988 | | | FEB. 1988 | | | MAR. 1988 | | | APR. 1988 | | | MAY 1988 | | | JUN. 1988 | | | JUL. 1988 | | | AUG. 1988 | | | SEP. 1988 | | | OCT. 1988 | | | NOV. 1988 | | | DEC. 1988 | | | JAN. 1989 | | | FEB. 1989 | | | MAR. 1989 | | | APR. 1989 | | | MAY 1989 | | | JUN. 1989 | | | JUL. 1989 | | | AUG. 1989 | | | SEP. 1989 | | | OCT. 1989 | | | NOV. 1989 | | | DEC. 1989 | | | JAN. 1990 | | | FEB. 1990 | | | MAR. 1990 | | | APR. 1990 | | | MAY 1990 | | | JUN. 1990 | | | JUL. 1990 | | | AUG. 1990 | | | SEP. 1990 | | | OCT. 1990 | | | NOV. 1990 | | | DEC. 1990 | | | JAN. 1991 | | | FEB. 1991 | | | MAR. 1991 | | | APR. 1991 | | | MAY 1991 | | | JUN. 1991 | | | JUL. 1991 | | | AUG. 1991 | | | SEP. 1991 | | | OCT. 1991 | | | NOV. 1991 | | | DEC. 1991 | | | JAN. 1992 | | | FEB. 1992 | | | MAR. 1992 | | | APR. 1992 | | | MAY 1992 | | | JUN. 1992 | | | JUL. 1992 | | | AUG. 1992 | | | SEP. 1992 | | | OCT. 1992 | | | NOV. 1992 | | | DEC. 1992 | | | JAN. 1993 | | | FEB. 1993 | | | MAR. 1993 | | | APR. 1993 | | | MAY 1993 | | | JUN. 1993 | | | JUL. 1993 | | | AUG. 1993 | | | SEP. 1993 | | | OCT. 1993 | | | NOV. 1993 | | | DEC. 1993 | | | JAN. 1994 | | | FEB. 1994 | | | MAR. 1994 | | | APR. 1994 | | | MAY 1994 | | | JUN. 1994 | | | JUL. 1994 | | | AUG. 1994 | | | SEP. 1994 | | | OCT. 1994 | | | NOV. 1994 | | | DEC. 1994 | | | JAN. 1995 | | | FEB. 1995 | | | MAR. 1995 | | | APR. 1995 | | | MAY 1995 | | | JUN. 1995 | | | JUL. 1995 | | | AUG. 1995 | | | SEP. 1995 | | | OCT. 1995 | | | NOV. 1995 | | | DEC. 1995 | | | JAN. 1996 | | | FEB. 1996 | | | MAR. 1996 | | | APR. 1996 | | | MAY 1996 | | | JUN. 1996 | | | JUL. 1996 | | | AUG. 1996 | | | SEP. 1996 | | | OCT. 1996 | | | NOV. 1996 | | | DEC. 1996 | | | JAN. 1997 | | | FEB. 1997 | | | MAR. 1997 | | | APR. 1997 | | | MAY 1997 | | | JUN. 1997 | | | JUL. 1997 | | | AUG. 1997 | | | SEP. 1997 | | | OCT. 1997 | | | NOV. 1997 | | | DEC. 1997 | | | JAN. 1998 | | | FEB. 1998 | | | MAR. 1998 | | | APR. 1998 | | | MAY 1998 | | | JUN. 1998 | | | JUL. 1998 | | | AUG. 1998 | | | SEP. 1998 | | | OCT. 1998 | | | NOV. 1998 | | | DEC. 1998 | | | JAN. 1999 | | | FEB. 1999 | | | MAR. 1999 | | | APR. 1999 | | | MAY 1999 | | | JUN. 1999 | | | JUL. 1999 | | | AUG. 1999 | | | SEP. 1999 | | | OCT. 1999 | | | NOV. 1999 | | | DEC. 1999 | | | JAN. 2000 | | | FEB. 2000 | | | MAR. 2000 | | | APR. 2000 | | | MAY 2000 | | | JUN. 2000 | | | JUL. 2000 | | | AUG. 2000 | | | SEP. 2000 | | | OCT. 2000 | | | NOV. 2000 | | | DEC. 2000 | | | JAN. 2001 | | | FEB. 2001 | | | MAR. 2001 | | | APR. 2001 | | | MAY 2001 | | | JUN. 2001 | | | JUL. 2001 | | | AUG. 2001 | | | SEP. 2001 | | | OCT. 2001 | | | NOV. 2001 | | | DEC. 2001 | | | JAN. 2002 | | | FEB. 2002 | | | MAR. 2002 | | | APR. 2002 | | | MAY 2002 | | | JUN. 2002 | | | JUL. 2002 | | | AUG. 2002 | | | SEP. 2002 | | | OCT. 2002 | | | NOV. 2002 | | | DEC. 2002 | | | JAN. 2003 | | | FEB. 2003 | | | MAR. 2003 | | | APR. 2003 | | | MAY 2003 | | | JUN. 2003 | | | JUL. 2003 | | | AUG. 2003 | | | SEP. 2003 | | | OCT. 2003 | | | NOV. 2003 | | | DEC. 2003 | | | JAN. 2004 | | | FEB. 2004 | | | MAR. 2004 | | | APR. 2004 | | | MAY 2004 | | | JUN. 2004 | | | JUL. 2004 | | | AUG. 2004 | | | SEP. 2004 | | | OCT. 2004 | | | NOV. 2004 | | | DEC. 2004 | | | JAN. 2005 | | | FEB. 2005 | | | MAR. 2005 | | | APR. 2005 | | | MAY 2005 | | | JUN. 2005 | | | JUL. 2005 | | | AUG. 2005 | | | SEP. 2005 | | | OCT. 2005 | | | NOV. 2005 | | | DEC. 2005 | | | JAN. 2006 | | | FEB. 2006 | | | MAR. 2006 | | | APR. 2006 | | | MAY 2006 | | | JUN. 2006 | | | JUL. 2006 | | | AUG. 2006 | | | SEP. 2006 | | | OCT. 2006 | | | NOV. 2006 | | | DEC. 2006 | | | JAN. 2007 | | | FEB. 2007 | | | MAR. 2007 | | | APR. 2007 | | | MAY 2007 | | | JUN. 2007 | | | JUL. 2007 | | | AUG. 2007 | | | SEP. 2007 | | | OCT. 2007 | | | NOV. 2007 | | | DEC. 2007 | | | JAN. 2008 | | | FEB. 2008 | | | MAR. 2008 | | | APR. 2008 | | | MAY 2008 | | | JUN. 2008 | | | JUL. 2008 | | | AUG. 2008 | | | SEP. 2008 | | | OCT. 2008 | | | NOV. 2008 | | | DEC. 2008 | | | JAN. 2009 | | | FEB. 2009 | | | MAR. 2009 | | | APR. 2009 | | | MAY 2009 | | | JUN. 2009 | | | JUL. 2009 | | | AUG. 2009 | | | SEP. 2009 | | | OCT. 2009 | | | NOV. 2009 | | | DEC. 2009 | | | JAN. 2010 | | | FEB. 2010 | | | MAR. 2010 | | | APR. 2010 | | | MAY 2010 | | | JUN. 2010 | | | JUL. 2010 | | | AUG. 2010 | | | SEP. 2010 | | | OCT. 2010 | | | NOV. 2010 | | | DEC. 2010 | | | JAN. 2011 | | | FEB. 2011 | | | MAR. 2011 | | | APR. 2011 | | | MAY 2011 | | | JUN. 2011 | | | JUL. 2011 | | | AUG. 2011 | | | SEP. 2011 | | | OCT. 2011 | | | NOV. 2011 | | | DEC. 2011 | | | JAN. 2012 | | | FEB. 2012 | | | MAR. 2012 | | | APR. 2012 | | | MAY 2012 | | | JUN. 2012 | | | JUL. 2012 | | | AUG. 2012 | | | SEP. 2012 | | | OCT. 2012 | | | NOV. 2012 | | | DEC. 2012 | | | JAN. 2013 | | | FEB. 2013 | | | MAR. 2013 | | | APR. 2013 | | | MAY 2013 | | | JUN. 2013 | | | JUL. 2013 | | | AUG. 2013 | | | SEP. 2013 | | | OCT. 2013 | | | NOV. 2013 | | | DEC. 2013 | | | JAN. 2014 | | | FEB. 2014 | | | MAR. 2014 | | | APR. 2014 | | | MAY 2014 | | | JUN. 2014 | | | JUL. 2014 | | | AUG. 2014 | | | SEP. 2014 | | | OCT. 2014 | | | NOV. 2014 | | | DEC. 2014 | | | JAN. 2015 | | | FEB. 2015 | | | MAR. 2015 | | | APR. 2015 | | | MAY 2015 | | | JUN. 2015 | | | JUL. 2015 | | | AUG. 2015 | | | SEP. 2015 | | | OCT. 2015 | | | NOV. 2015 | | | DEC. 2015 | | | JAN. 2016 | | | FEB. 2016 | | | MAR. 2016 | | | APR. 2016 | | | MAY 2016 | | | JUN. 2016 | | | JUL. 2016 | | | AUG. 2016 | | | SEP. 2016 | | | OCT. 2016 | | | NOV. 2016 | | | DEC. 2016 | | | JAN. 2017 | | | FEB. 2017 | | | MAR. 2017 | | | APR. 2017 | | | MAY 2017 | | | JUN. 2017 | | | JUL. 2017 | | | AUG. 2017 | | | SEP. 2017 | | | OCT. 2017 | | | NOV. 2017 | | | DEC. 2017 | | | JAN. 2018 | | | FEB. 2018 | | | MAR. 2018 | | | APR. 2018 | | | MAY 2018 | | | JUN. 2018 | | | JUL. 2018 | | | AUG. 2018 | | | SEP. 2018 | | | OCT. 2018 | | | NOV. 2018 | | | DEC. 2018 | | | JAN. 2019 | | | FEB. 2019 | | | MAR. 2019 | | | APR. 2019 | | | MAY 2019 | | | JUN. 2019 | | | JUL. 2019 | | | AUG. 2019 | | | SEP. 2019 | | | OCT. 2019 | | | NOV. 2019 | | | DEC. 2019 | | | JAN. 2020 | | | FEB. 2020 | | | MAR. 2020 | | | APR. 2020 | | | MAY 2020 | | | JUN. 2020 | | | JUL. 2020 | | | AUG. 2020 | | | SEP. 2020 | | | OCT. 2020 | | | NOV. 2020 | | | DEC. 2020 | | | JAN. 2021 | | | FEB. 2021 | | | MAR. 2021 | | | APR. 2021 | | | MAY 2021 | | | JUN. 2021 | | | JUL. 2021 | | | AUG. 2021 | | | SEP. 2021 | | | OCT. 2021 | | | NOV. 2021 | | | DEC. 2021 | | | JAN. 2022 | | | FEB. 2022 | | | MAR. 2022 | | | APR. 2022 | | | MAY 2022 | | | JUN. 2022 | | | JUL. 2022 | | | AUG. 2022 | | | SEP. 2022 | | | OCT. 2022 | | | NOV. 2022 | | | DEC. 2022 | | | JAN. 2023 | | | FEB. 2023 | | | MAR. 2023 | | | APR. 2023 | | | MAY 2023 | | | JUN. 2023 | | | JUL. 2023 | | | AUG. 2023 | | | SEP. 2023 | | | OCT. 2023 | | | NOV. 2023 | | | DEC. 2023 | | | JAN. 2024 | | | FEB. 2024 | | | MAR. 2024 | | | APR. 2024 | | | MAY 2024 | | | JUN. 2024 | | | JUL. 2024 | | | AUG. 2024 | | | SEP. 2024 | | | OCT. 2024 | | | NOV. 2024 | | | DEC. 2024 | | | JAN. 2025 | | | FEB. 2025 | | | MAR. 2025 | | | APR. 2025 | | | MAY 2025 | | | JUN. 2025 | | | JUL. 2025 | | | AUG. 2025 | | | SEP. 2025 | | | OCT. 2025 | | | NOV. 2025 | | | DEC. 2025 | | | JAN. 2026 | | | FEB. 2026 | | | MAR. 2026 | | | APR. 2026 | | | MAY 2026 | | | JUN. 2026 | | | JUL. 2026 | | | AUG. 2026 | | | SEP. 2026 | | | OCT. 2026 | | | NOV. 2026 | | | DEC. 2026 | | | JAN. 2027 | | | FEB. 2027 | | | MAR. 2027 | | | APR. 2027 | | | MAY 2027 | | | JUN. 2027 | | | JUL. 2027 | | | AUG. 2027 | | | SEP. 2027 | | | OCT. 2027 | | | NOV. 2027 | | | DEC. 2027 | | | JAN. 2028 | | | FEB. 2028 | | | MAR. 2028 | | | APR. 2028 | | | MAY 2028 | | | JUN. 2028 | | | JUL. 2028 | | | AUG. 2028 | | | SEP. 2028 | | | OCT. 2028 | | | NOV. 2028 | | | DEC. 2028 | | | JAN. 2029 | | | FEB. 2029 | | | MAR. 2029 | | | APR. 2029 | | | MAY 2029 | | | JUN. 2029 | | | JUL. 2029 | | | AUG. 2029 | | | SEP. 2029 | | | OCT. 2029 | | | NOV. 2029 | | | DEC. 2029 | | | JAN. 2030 | | | FEB. 2030 | | | MAR. 2030 | | | APR. 2030 | | | MAY 2030 | | | JUN. 2030 | | | JUL. 2030 | | | AUG. 2030 | | | SEP. 2030 | | | OCT. 2030 | | | NOV. 2030 | | | DEC. 2030 | | | JAN. 2031 | | | FEB. 2031 | | | MAR. 2031 | | | APR. 2031 | | | MAY 2031 | | | JUN. 2031 | | | JUL. 2031 | | | AUG. 2031 | | | SEP. 2031 | | | OCT. 2031 | | | NOV. 2031 | | | DEC. 2031 | | | JAN. 2032 | | | FEB. 2032 | | | MAR. 2032 | | | APR. 2032 | | | MAY 2032 | | | JUN. 2032 | | | JUL. 2032 | | | AUG. 2032 | | | SEP. 2032 | | | OCT. 2032 | | | NOV. 2032 | | | DEC. 2032 | | | JAN. 2033 | | | FEB. 2033 | | | MAR. 2033 | | | APR. 2033 | | | MAY 2033 | | | JUN. 2033 | | | JUL. 2033 | | | AUG. 2033 | | | SEP. 2033 | | | OCT. 2033 | | | NOV. 2033 | | | DEC. 2033 | | | JAN. 2034 | | | FEB. 2034 | | | MAR. 2034 | | | APR. 2034 | | | MAY 2034 | | | JUN. 2034 | | | JUL. 2034 | | | AUG. 2034 | | | SEP. 2034 | | | OCT. 2034 | | | NOV. 2034 | | | DEC. 2034 | | | JAN. 2035 | | | FEB. 2035 | | | MAR. 2035 | | | APR. 2035 | | | MAY 2035 | | | JUN. 2035 | | | JUL. 2035 | | | AUG. 2035 | | | SEP. 2035 | | | OCT. 2035 | | | NOV. 2035 | | | DEC. 2035 | | | JAN. 2036 | | | FEB. 2036 | | | MAR. 2036 | | | APR. 2036 | | | MAY 2036 | | | JUN. 2036 | | | JUL. 2036 | | | AUG. 2036 | | | SEP. 2036 | | | OCT. 2036 | | | NOV. 2036 | | | DEC. 2036 | | | JAN. 2037 | | | FEB. 2037 | | | MAR. 2037 | | | APR. 2037 | | | MAY 2037 | | | JUN. 2037 | | | JUL. 2037 | | | AUG. 2037 | | | SEP. 2037 | | | OCT. 2037 | | | NOV. 2037 | | | DEC. 2037 | | | JAN. 2038 | | | FEB. 2038 | | | MAR. 2038 | | | APR. 2038 | | | MAY 2038 | | | JUN. 2038 | | | JUL. 2038 | | | AUG. 2038 | | | SEP. 2038 | | | OCT. 2038 | | | NOV. 2038 | | | DEC. 2038 | | | JAN. 2039 | | | FEB. 2039 | | | MAR. 2039 | | | APR. 2039 | | | MAY 2039 | | | JUN. 2039 | | | JUL. 2039 | | | AUG. 2039 | | | SEP. 2039 | | |
<th colspan
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

ORIGINAL PAGE IS
OF POOR QUALITY.

TABLE IV
NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TRANSMITTING STATION	CIRCUIT NUMBER	MCY-201	MCY-202	MCY-203	MCY-204	MCY-205	MCY-206	MCY-207	MCY-102	MCY-231	MCY-232	MCY-233	MCY-234	MCY-254	MCY-252	MCY-211	MCY-213	MCY-215	LONG T224 AVC2
		OP MAY 1962	WHD	LONG T224 AVC2															
Canberra NSP-43 (Fidabilita)/		100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
Canberra	-202	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
	-203	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
	-204	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
	-205	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
	-206	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
	-207	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
	MCY-102	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.91	100.00	100.00	100.00	100.00	100.00	100.00	99.90	100.00	99.98	
Canberra NSP-6 (SNTA)/Canberra		WHD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	-232	WHD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	-233	WHD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	-234	WHD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MCY-254	TTY	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Canberra NSP/Canberra		WHD	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	MCY-252	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Canberra SNTN (Portocal Valley)/		WHD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Canberra	-213	WHD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	-215	WHD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NOTE: 0 = Unobtainable data or the circuit was deactivated.

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

MANUFACTURING STATION	CIRCUIT NUMBER	ROUTE	CP SAC	MAY 1962	JUN. 1962	JUL. 1962	SEP. 1962	OCT. 1962	NOV. 1962	DEC. 1962	JAN. 1963	FEB. 1963	MAR. 1963	APR. 1963	JUN. 1963	LONG TERM AVAIL.
<i>Canberra STEM (Ferrol Valley) / NCM-101</i>																
Canberra (Cont.)	-103	WED	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	-3001	WED	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-3002	WED	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	-3003	WED	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Canberra STEM (Ferrol Valley) /	NCM-6001	WED	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Canberra (NS-4)	-6002	WED	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Cape Canaveral APR (NSC) /	GD-56524	TTT	100.00	100.00	99.94	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Houston (NSC)	-56529	TTT	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	GD-56731	VDA	100.00	99.50	100.00	100.00	100.00	96.12	96.26	99.95	99.38	97.32	100.00	99.96	93.16	
	-56732	VDA	99.71	100.00	100.00	100.00	100.00	98.79	98.95	100.00	100.00	100.00	99.47	99.69	99.67	
Cape Canaveral APR (Planger NS) / NY 3002-2163	TTT	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Cape Canaveral APR (Planger NS) / NY 3117-47193-2	TTT	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Cape Canaveral NS	GD-56455	TTT	99.90	100.00	100.00	100.00	99.94	100.00	100.00	100.00	100.00	99.95	99.66	99.95	100.00	99.96
	GD-56203	VDA	100.00	100.00	99.59	100.00	99.94	100.00	100.00	100.00	100.00	99.91	100.00	99.95	99.95	99.95
	-56408	VDA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-56409	VDA	99.96	100.00	100.00	100.00	99.75	100.00	100.00	100.00	100.00	100.00	98.93	100.00	99.89	
	-56411	VDA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

NOTE: 0 = Undetectable data or the circuit was deactivated.

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE IV
NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TRANSMITTER NUMBER	CIRCUIT NUMBER	PLATE	1981		1982		1983		1984		1985		1986	
			1981	1982	1981	1982	1981	1982	1981	1982	1981	1982	1981	1982
CIRCUIT 54-5446 (Cont'd.)														
-58599	VIA	99.9%	100.00	100.00	99.97	100.00	99.95	100.00	100.00	100.00	99.97	100.00	99.97	99.99
-58600	VIA	100.00	99.98	100.00	100.00	99.75	100.00	100.00	100.00	100.00	99.99	100.00	100.00	99.98
-58601	VIA	100.00	100.00	100.00	100.00	99.95	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.99
-58602	VIA	100.00	100.00	100.00	100.00	99.75	100.00	100.00	100.00	100.00	99.99	100.00	100.00	99.97
-58614	VIA	99.94	100.00	100.00	100.00	99.97	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.99
-58643	VIA	0	0	0	0	0	0	0	0	0	0	0	0	99.97
-58644	VIA	0	0	0	0	0	0	0	0	0	0	0	0	100.00
-58671	VIA	99.94	100.00	100.00	100.00	99.72	100.00	100.00	100.00	100.00	99.94	100.00	100.00	99.97
-58674	VIA	100.00	100.00	100.00	94.94	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.97
-58734	VIA	100.00	99.99	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.92	100.00	99.97	99.97
-59330	VIA	100.00	100.00	100.00	100.00	99.72	100.00	99.91	100.00	100.00	100.00	100.00	100.00	99.95
-59331	VIA	100.00	99.94	100.00	100.00	99.86	100.00	99.75	100.00	100.00	99.95	100.00	99.95	99.96
-59332	VIA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.89	100.00	100.00	99.95
CP-58410	VOC	99.97	100.00	100.00	99.93	99.75	100.00	100.00	100.00	100.00	99.97	100.00	100.00	99.97
-58412	VOC	99.97	99.96	100.00	99.75	100.00	100.00	100.00	100.00	100.00	99.99	100.00	100.00	99.97
-58415	VOC	100.00	99.34	100.00	99.64	100.00	97.03	100.00	100.00	99.96	99.99	100.00	100.00	100.00
-58424	VOC	99.89	99.87	100.00	99.92	99.75	100.00	99.94	100.00	100.00	99.77	100.00	100.00	99.95
-58534	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

NOTE: 0 = Undataable data or the circuit was deactivated.

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TRANSMITTER; STATION	CIRCUIT NUMBER	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	LONG TERM MEAN
Cape Canaveral RT (Cont'd)	GP-5656	400	0	0	0	0	0	0	0	0	0	100.00	100.00	99.70	100.00	100.00	100.00	99.50
	-56517	VOC	0	0	0	0	0	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-56526	400	100.00	99.93	100.00	100.00	100.00	100.00	99.99	100.00	100.00	100.00	100.00	100.00	100.00	99.97	99.97	99.99
	-56713	VOC	0	0	0	0	0	0	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00
	-56714	400	0	0	0	0	0	0	0	0	0	100.00	100.00	99.94	100.00	100.00	100.00	99.95
	-56775	VOC	3	0	0	0	0	0	0	0	0	100.00	99.73	100.00	100.00	100.00	100.00	99.91
	GP-59198	777	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Cape Canaveral RT/Houston (300)	GP-59239	400	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-58768	VOC	100.00	100.00	100.00	0	0	0	0	0	0	0	0	0	0	0	0	100.00
	-59449	VOC	0	0	0	0	0	0	0	0	0	0	0	100.00	100.00	100.00	100.00	100.00
	-59450	VOC	0	0	0	0	0	0	0	0	0	0	0	100.00	100.00	100.00	100.00	100.00
Chilton (IMAS CC)	WTI-186	WTI	0	0	0	98.98	93.39	99.38	100.00	100.00	96.83	24.67	95.91	30.25	30.25	37.55		
Chilton (IMAS CC)/London	IC-157	WTI	99.48	100.00	100.00	100.00	100.00	100.00	100.00	100.00	96.56	99.31	100.00	100.00	100.00	100.00	99.56	
	-324	WTI	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.82	100.00	100.00	100.00	100.00	100.00	99.92
	-325	WTI	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.69	100.00	98.16	97.73	100.00	99.63		
	-40152	777	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	95.32	100.00	99.61		
	GP-59738	WTI	0	0	0	0	0	0	0	0	0	1	100.00	100.00	0	0	100.00	
	-59739	WTI	0	0	0	0	0	0	0	0	0	0	100.00	100.00	0	0	100.00	
Colorado Springs (4000)	WTI-3001	777	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	

NOTE: 0 = Unobtainable data or the circuit was deactivated.

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

NOTE: 0 = Unobtainable data or the circuit was deactivated.

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TELEUNICING STATION	CIRCUIT NUMBER	MODE OF	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	JUN	LONG TERM	LONG TERM
DALLAS & SAN ANTONIO (Univ of Texas)/USRC (Bldg 23)	GD-59043	DDS	99.09	96.04	99.80	99.91	100.00	100.00	98.87	96.45	99.73	100.00	100.00	100.00	99.16	99.16	
Darmstadt (ESRO)/Madrid	TDR-1	TTV	100.00	98.27	99.99	99.91	100.00	99.87	100.00	99.73	99.69	99.91	96.39	99.73	99.73	99.73	
Downey (RL)/Houston (JSC)	GD-59130	DAT	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0	0	0	0	0	100.00	100.00	
	-58131	DAT	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0	0	0	0	0	100.00	100.00	
	-58451	DAT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99.16
	GP-58132	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0	0	0	0	0	0	0	100.00
	-58560	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.94
	-58561	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-58562	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-58563	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	TACA-800034	WID	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	HDR-800027	WID	100.00	100.00	99.69	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.97
Downey (RL)/Kennedy Space Center		GRV-0092	VID	100.00	100.00	100.00	100.00	83.03	99.99	100.00	100.00	100.00	100.00	100.00	89.57	97.72	
Huntsville-Kauai-Kennedy																	
Dryden FRC (ERCC)/Houston (JSC)	GD-58873	TTV	100.00	99.90	100.00	100.00	97.48	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.78	
	GD-58442	VDA	100.00	100.00	100.00	0	0	0	0	0	0	0	0	0	0	100.00	
	-58710	VDA	100.00	100.00	100.00	0	0	0	0	0	0	0	0	0	0	100.00	
	-58711	VDA	100.00	100.00	100.00	0	0	0	0	0	0	0	0	0	0	100.00	
	-59712	VDA	100.00	100.00	100.00	0	0	0	0	0	0	0	0	0	0	100.00	

NOTE: 0 = Unobtainable data or the circuit was deactivated.

ORIGINAL PAGE 10
OF POOR QUALITY

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TRANSMISSION STATION	POLE	CIRCUIT NUMBER	CIRCUIT NUMBER	CIRCUIT NUMBER												LONG DIST.
				CP	PAV	JUL.	AGS.	SEP.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	
Dryden PAC (WDC)/Houston (WSC)																
-54777	VIA	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
-54779	VIA	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
-54800	VIA	0	0	0	0	100.00	99.91	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.98
-54860-4	VCC	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.98
-54724	VCC	100.00	100.00	100.00	0	0	0	0	0	0	0	0	0	0	0	100.00
-54726	VCC	100.00	100.00	100.00	0	0	0	0	0	0	0	0	0	0	0	100.00
-54727	VCC	100.00	99.99	100.00	0	0	0	0	0	0	0	0	0	0	0	100.00
-54729	VCC	100.00	100.00	100.00	0	0	0	0	0	0	0	0	0	0	0	100.00
-54730	VCC	100.00	100.00	100.00	0	0	0	0	0	0	0	0	0	0	0	100.00
-54801	VCC	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
-54802	VCC	0	0	0	0	100.00	100.00	99.98	100.00	100.00	99.91	100.00	100.00	100.00	100.00	99.98
-54803	VCC	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.74	100.00	98.72	98.72
-54804	VCC	0	0	0	0	100.00	100.00	99.94	100.00	100.00	99.72	100.00	97.91	97.91	99.59	99.59
-54805	VCC	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.70	99.98	99.98
-54806	VCC	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.17	100.00	99.98	99.98
-54995	VCC	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
-54996	VCC	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	98.92	99.87	99.87
-54997	VCC	0	0	0	0	100.00	100.00	99.94	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.98

NOTE: 0 = Unreliable data or the circuit was direct located.

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TERMINATING STATION	CIRCUIT NUMBER	MODE	LONG TERM AVERAGE											
			OP SVC	MAY 1982	JUN 1982	JUL 1982	AUG 1982	SEP 1982	OCT 1982	NOV 1982	DEC 1982	JAN 1983	FEB 1983	MAR 1983
Dryden FNC (INFO) / Houston (JSC)	GP-5898	VDC	0	0	0	0	100.00	99.87	100.00	100.00	100.00	100.00	100.00	100.00
(Cont.)	-58999	VDC	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	99.84	100.00
	-59146	VDC	100.00	100.00	100.00	0	0	0	0	0	0	0	0	0
	-59147	VDC	100.00	100.00	100.00	0	0	0	0	0	0	0	0	100.00
	-59149	VDC	100.00	100.00	100.00	0	0	0	0	0	0	0	0	0
	-59150	VDC	100.00	100.00	100.00	0	0	0	0	0	0	0	0	100.00
	-59226	VDC	100.00	100.00	100.00	0	0	0	0	0	0	0	0	100.00
	-59237	VDC	100.00	100.00	100.00	0	0	0	0	0	0	0	0	100.00
	-59238	VDC	100.00	100.00	100.00	0	0	0	0	0	0	0	0	100.00
Dryden FNC (INFO) / Houston (JSC) via SATCOM	GRWD-8062	VDA	100.00	99.70	99.84	100.00	99.89	100.00	99.92	100.00	100.00	100.00	100.00	100.00
	-8063	VDA	100.00	98.72	100.00	100.00	99.90	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-8064	VDA	99.93	98.68	99.95	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-8065	VDA	100.00	98.72	100.00	100.00	99.91	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-8069	VDC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.92	100.00	100.00	100.00	100.00
	GRAV-8066	VDC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-8067	VDC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-8068	VDC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.92	100.00	100.00	100.00	99.99

NOTE: 0 = Unobtainable data or the circuit was deactivated.

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

ORIGINAL PAGE IS
OF POOR QUALITY

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TERMINATING STATION	CIRCUIT NUMBER	MOE OF SMC	MAY 1982	JUN. 1982	JUL. 1982	AUG. 1982	SEP. 1982	OCT. 1982	NOV. 1982	DEC. 1982	JAN. 1983	FEB. 1983	MAR. 1983	APR. 1983	JUN. 1983	LONG TERM AVG
Dryden PSC (Blackhorn)/Pasadena	707-345	TTY	100.00	100.00	100.00	99.84	100.00	100.00	99.93	99.83	100.00	97.33	100.00	99.74		
W. SMC	-355	TTY	100.00	100.00	100.00	99.84	100.00	100.00	99.83	100.00	99.83	100.00	97.33	100.00	99.75	
Dryden PSC (SPW)/DPMC (BRCP)	593P-2666	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-2667	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-2668	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-3023	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-3025	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-3027	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-3029	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-3031	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-3033	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-3035	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-3037	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-3039	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-3041	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Durham (Univ of New Hampshire)/	GD-58444	DS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.91	100.00	99.96	
		GSPC Bldg-7														

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TERMINATING STATION	CIRCUIT NUMBER	MODE	LONG														
			Q/SAC	MAY 1982	JUN. 1982	JUL. 1982	AUG. 1982	SEP. 1982	OCT. 1982	NOV. 1982	DEC. 1982	JAN. 1983	FEB. 1983	MAR. 1983	APR. 1983	JUN. 1983	LONG
Edwards AFB (AFPTC)/NSFC (BRCF)	5923-3145	VOC	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-3146	VOC	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-3147	VOC	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-3148	VOC	0	95.79	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.62
	-3149	VOC	0	99.22	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-3150	VOC	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-3151	VOC	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-3152	VOC	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	103.93
	-3153	VOC	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-3154	VOC	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Richards AFB (AFPTC)/Pasadena NSFC 743-1407-T		TTV	100.00	100.00	100.00	100.00	100.00	100.00	78.32	97.86	100.00	100.00	100.00	100.00	100.00	100.00	99.02
El Paso (FAA)/Vandenberg	GDA-59105	VDA	100.00	100.00	0	0	0	0	0	0	0	0	0	0	0	0	100.00
AFB (NSFC)	-59106	VDA	100.00	100.00	0	0	0	0	0	0	0	0	0	0	0	0	100.00
	-59107	VIA	100.00	100.00	0	0	0	0	0	0	0	0	0	0	0	0	100.00
Rt. Davis (McDonald Observatory)	GM-59373	TTV	99.66	100.00	99.91	100.00	0	100.00	100.00	0	0	0	0	0	0	0	99.93
Texas																	
Pt. Mugu (NSFC)/White Sands (NSFC)	GDA-58449	VDA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-58450	VDA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

NOTE: 0 = Undetectable data or the circuit was deactivated.

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TRANSMITTER STATION	CIRCUIT NUMBER	MOLE OF SAC	MAY 1982	JUN. 1982	AUG. 1982	SEPT. 1982	OCT. 1982	NOV. 1982	DEC. 1982	JAN. 1983	FEB. 1983	MAR. 1983	APR. 1983	MAY 1983	JUN. 1983	LONG TERM AVERAGE	
Pt. Inachura (WFOC)/White Sands (WFOC) (Cont.)																	
Gilmores Creek via SATCOM (Greenbelt)	GLA-58413	VDA	99.93	100.00	99.78	100.00	99.72	99.93	99.92	99.96	99.96	99.76	99.48	99.99	99.99	99.75	
GNV-8041-R	VDC	98.39	99.57	98.05	98.39	98.33	97.58	96.67	100.00	100.00	100.00	100.00	99.96	99.96	99.96	98.92	
GNV-8000-R	WID	99.66	99.50	99.66	98.47	99.32	99.23	99.08	100.00	99.14	100.00	99.62	99.99	99.99	99.47		
-8040-R	WID	98.39	99.67	97.62	97.58	98.33	97.58	97.50	100.00	100.00	100.00	99.54	99.96	99.96	98.85		
971A-188	VDA	99.92	100.00	99.78	100.00	99.70	99.91	99.91	99.84	99.98	99.98	98.14	99.67	99.99	99.99	99.74	
-189	VDA	100.00	100.00	99.78	100.00	99.70	99.93	99.92	99.90	99.96	99.71	99.36	99.94	99.94	99.85		
-238	VDA	99.92	100.00	99.78	99.95	99.70	99.93	99.91	99.84	99.98	98.11	99.67	99.94	99.94	99.73		
933-12	WID	99.99	99.98	98.93	99.76	99.51	99.17	98.79	99.58	99.63	100.00	99.52	99.99	99.99	99.58		
Gilmores Creek via SATCOM (Point Reyes)	GLA-58565	VDA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Goldstone Space Center (TDS Van)	7403-7222	WID	0	0	0	0	0	0	0	99.38	100.00	100.00	100.00	100.00	100.00	99.90	
Goldstone	GLA-58461	DIB	100.00	99.94	99.70	99.62	99.73	99.74	99.85	99.72	99.82	99.90	99.62	100.00	100.00	99.72	
-58582	VDA	99.86	98.94	98.59	99.63	98.75	96.33	100.00	98.21	100.00	99.79	99.65	99.53	99.11	99.46		
GT-58869	TTV	99.71	99.92	99.71	99.62	98.70	97.46	99.57	99.81	99.94	99.90	99.33	99.81	99.81	99.46		
Goldstone via SATCOM	GNV-8026	VDA	100.00	99.61	100.00	99.44	100.00	99.98	99.97	100.00	99.92	99.70	100.00	100.00	99.89		
-8027	VDA	99.47	99.81	100.00	99.23	100.00	99.00	99.97	100.00	100.00	99.77	99.62	100.00	99.82			
GNV-8043-R	VDC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00		

NOTE: 0 = undatainable data or the circuit was deactivated.

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE IV
NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TERMINATING STATION	CIRCUIT NUMBER	MOE	APR 1982	MAY 1982	JUN. 1982	JUL. 1982	AUG. 1982	SEP. 1982	OCT. 1982	NOV. 1982	DEC. 1982	JAN. 1983	FEB. 1983	MAR. 1983	APR. 1983	MAY 1983	JUN. 1983	JUL. 1983	LONG TERM AVG	
Goldstone via SATCOM (Cont)		QSD-5689	WDD	100.00	99.31	100.00	99.95	99.64	99.73	99.87	100.00	99.26	99.56	99.71	100.00	99.70				
	-8042-R	WDD	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
	-8091-R	WDD	100.00	99.96	99.80	99.15	100.00	100.00	99.89	100.00	99.32	99.71	100.00	99.82						
Goldstone/Pasadena WSC	QSD-59228	VIA	100.00	99.61	100.00	99.95	99.53	100.00	99.06	98.96	98.24	94.69	100.00	99.17						
	-58270	VIA	100.00	99.80	100.00	99.95	100.00	100.00	99.21	99.26	99.52	100.00	100.00	99.50	99.77					
	-58271	VIA	100.00	99.80	100.00	99.95	97.15	100.00	99.72	99.26	99.52	100.00	100.00	99.45	99.57					
	-58276	VIA	100.00	99.80	99.91	99.95	100.00	96.24	100.00	99.26	98.35	100.00	100.00	100.00	99.46					
70E-337	TTV	100.00	98.25	98.87	96.55	99.68	100.00	99.29	99.83	99.89	99.79	99.70	100.00	99.40						
-339	TTV	100.00	99.24	99.73	99.22	99.70	100.00	99.31	99.83	100.00	99.79	99.70	97.79	99.53						
	-359	TTV	100.00	100.00	100.00	99.95	99.70	97.73	98.17	99.24	98.84	99.90	96.86	100.00	99.20					
Coleta (Delco Electronics) / Pasadena WSC	CP-58714	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.40	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.95	
Greenbelt (823/26) & Houston (WSC) / White Sands (WST)	QSD-8084-R	WDD	0	0	0	0	0	0	0	99.38	100.00	100.00	99.70	100.00	99.83					
Greenbelt (WSC) & Houston (WST) / White Sands (WST)	WAX-8213-T	WDD	0	0	0	0	0	0	0	0	0	0	0	0	97.35	97.35				
Greenbelt (WSC) & White Sands (WST) / White Sands (WST)	WFX-8210-T	WDD	0	0	0	0	0	0	0	0	0	0	0	0	100.00	100.00				
Greenbelt (WSC) & White Sands (WST) / Houston (WSC)	JAX-8212-T	WDD	0	0	0	0	0	0	0	0	0	0	0	0	100.00	100.00				
Gum via Jamestown (IS IV A P-6)	JPK-8209-T	WDD	0	0	0	0	0	0	0	0	0	0	0	0	100.00	100.00				
Gum via Palau (WSTW)	QSD-58695	VIA	0	99.73	99.69	100.00	100.00	97.43	99.78	99.03	99.97	100.00	99.98	100.00	99.60					
IS IV A P-6	QSD-58343	WDD	99.63	99.45	99.79	99.69	99.77	99.07	99.47	99.86	100.00	100.00	99.38	100.00	99.64					
	-58344-R	WDD	0	99.87	99.83	0	0	100.00	100.00	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.96	
	-58345-R	WDD	0	99.70	99.83	0	0	100.00	100.00	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.94	
Gum via San Francisco (W2 4 TRANSPAC 1 Cables)	CP-58607	TTV	0	100.00	100.00	100.00	0	0	0	0	0	0	0	0	100.00	99.20				

NOTE: 0 = Unreliable data or the circuit was deactivated.

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TERMINATING STATION	CIRCUIT NUMBER	MODE	MAX	JUN	JUL	AGS	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	LONG
		VIA	99.38	99.71	99.25	99.92	99.38	98.73	76.00	92.20	99.52	99.50	99.62	99.83	99.83	96.92
Globe via San Francisco #13 6																
TRANSPIR 1 Cables)																
Hanover (Langley Research Center) (GMA-58609	VIA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-58748	VIA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(GP-58564	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Hightstown (NCA)/GSNC	VOC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hightstown (NCA)/Switzerland (ROMA) (GMA-58808	VIS	100.00	100.00	99.95	99.99	100.00	100.00	59.94	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.99
via GSC																
Holiday Inn (Allard Space Lab)/ London	VIA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Houston (NSC)	VIS	100.00	100.00	99.97	100.00	100.00	100.00	99.56	100.00	99.13	96.84	100.00	99.74	99.60		
-58919	DES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-58923	TTY	100.00	100.00	99.90	100.00	100.00	100.00	99.99	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.97
-58924	TTY	100.00	100.00	99.98	100.00	100.00	100.00	99.99	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.98
-59112	TTY	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.96
GMA-58293	VIA	99.65	99.83	99.82	100.00	99.88	100.00	99.81	99.97	100.00	100.00	99.82	100.00	99.90		
-58294	VIA	100.00	99.83	99.88	100.00	100.00	99.99	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.96
-58425	VIA	100.00	99.74	100.00	100.00	99.88	100.00	100.00	99.95	100.00	100.00	100.00	100.00	100.00	100.00	99.96
-59126	VIA	99.39	99.91	99.98	99.80	100.00	99.97	99.95	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.92
-59127	VIA	97.85	100.00	99.98	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.82

NOTE: 0 = Undetainable data or the circuit was deactivated.

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TRANSMITTING STATION	CIRCUIT NUMBER	MOS	MONTH										LONG TERM			
			APR 1982	MAY 1982	JUN. 1982	JUL. 1982	AUG. 1982	SEP. 1982	OCT. 1982	NOV. 1982	DEC. 1982	JAN. 1983	FEB. 1983	MAR. 1983	APR. 1983	TELE AVG
Houston (181) Cont.																
GP-59126	WDC	99.96	99.97	100.00	100.00	99.89	100.00	99.97	100.00	99.97	100.00	99.97	100.00	100.00	99.98	
GP-58292	WDC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
-58540	WDC	0	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
-58597	WDC	0	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
-58611	WDC	0	0	0	0	0	100.00	99.70	100.00	100.00	97.97	100.00	100.00	100.00	99.70	
-58612	WDC	0	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
-58613	WDC	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
-58615	WDC	0	0	0	0	100.00	100.00	99.89	100.00	97.30	100.00	100.00	100.00	100.00	99.65	
-58667	WDC	0	0	0	0	99.28	100.00	99.75	100.00	99.89	100.00	99.96	100.00	99.87		
-58668	WDC	0	0	0	0	100.00	100.00	100.00	99.96	100.00	100.00	100.00	100.00	100.00	100.00	
-59120	WDC	99.97	99.39	99.95	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
-59121	WDC	100.00	99.92	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
-59122	WDC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
-59123	WDC	99.67	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.97	
59125	WDC	100.00	100.00	100.00	100.00	100.00	100.00	99.97	100.00	100.00	0	0	0	0	100.00	
-59143	WDC	99.67	100.00	99.42	99.36	100.00	100.00	100.00	100.00	100.00	99.71	0	0	0	99.80	
-59232	WDC	100.00	99.86	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0	0	0	99.98	
59292	WDC	100.00	99.84	100.00	0	0	0	0	0	0	0	0	0	0	99.95	
-59351	WDC	100.00	100.00	100.00	100.00	100.00	100.00	99.99	100.00	100.00	0	0	0	0	100.00	

NOTE: 0 = Unobtainable data or the circuit was deactivated.

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TRANSMITTING STATION	CIRCUIT NUMBER	GP	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	JUN	LONG TERM AVERAGE
Houston (JSC) Cont.	GP-62345	WCC	99.58	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.97
	N-66001	WCC	100.00	100.00	99.75	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.31
	-66002	WCC	100.00	99.69	91.86	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	96.47
	-66003	WCC	100.00	100.00	99.75	0	100.00	100.00	97.78	98.42	98.42	100.00	100.00	96.50	96.19	96.47
Houston (JSC) and Washington D.C. GP-59120	WCC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100.00
	-59121	WCC	0	0	0	0	0	0	0	0	0	0	0	0	0	100.00
	-59122	WCC	0	0	0	0	0	0	0	0	0	0	0	0	0	100.00
	-59125	WCC	0	0	0	0	0	0	0	0	0	0	0	0	0	100.00
	-59232	WCC	0	0	0	0	0	0	0	0	0	0	0	0	0	100.00
	-59351	WCC	0	0	0	0	0	0	0	0	0	0	0	0	0	100.00
Houston (JSC and JSC ESTA)/JSCC GP-59143	WCC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100.00

NOTE: 0 = Unreliable data or the circuit was deactivated.

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TERMINATING STATION	CIRCUIT NUMBER	DATE	MONTHLY AVAILABILITY (%)												LAST
			JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AGO.	SEP.	OCT.	NOV.	DEC.	
Houston (TX) via SARTIN															
ONW-5047	VDA	100.00	99.96	100.00	100.00	99.91	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.96
-8048	VDA	100.00	99.60	100.00	99.95	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.93
-8049	VDA	99.97	100.00	100.00	100.00	100.00	100.00	99.97	99.91	99.76	100.00	100.00	99.66	99.98	99.94
-8055	VDA	99.96	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.95
-8056	VDA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.96
-8057	VDA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.92
ONW-8050	VOC	99.75	99.82	100.00	99.92	100.00	100.00	99.75	100.00	99.97	100.00	99.97	100.00	100.00	99.93

NOTE: 0 = Unreliable data or the circuit was deactivated.

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TRANSMITTING STATION	CIRCUIT NUMBER	TIME	1982												LONG TERM AVER
			APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	
Houston (1007) via SPRINT (cont.)															
-8051	VDC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.76	99.65	100.00	99.95	
-8052	VDC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.97	100.00	99.66	100.00	99.97
-8053	VDC	99.95	99.67	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.97	100.00	99.55	100.00	99.93
-8054	VDC	100.00	100.00	100.00	99.97	100.00	100.00	99.95	100.00	99.97	100.00	99.47	99.76	99.93	
-8058	VDC	100.00	100.00	100.00	100.00	100.00	100.00	99.92	99.91	100.00	100.00	100.00	100.00	99.90	
-8059	VDC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.80	99.97	100.00	100.00	99.69	99.97	
-8060	VDC	100.00	100.00	100.00	99.90	100.00	100.00	99.93	99.73	100.00	100.00	100.00	100.00	99.93	
-8061	VDC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.97	100.00	100.00	100.00	100.00	100.00	
-8195	VDC	0	0	0	0	0	0	0	0	0	99.97	100.00	99.66	99.90	
-8196	VDC	0	0	0	0	0	0	0	0	0	99.89	100.00	99.66	99.97	
-8197	VDC	0	0	0	0	0	0	0	0	0	99.97	100.00	99.66	99.90	
-8198	VDC	0	0	0	0	0	0	0	0	0	99.97	100.00	99.56	99.90	
-8199	VDC	0	0	0	0	0	0	0	0	0	99.97	100.00	99.65	99.90	
-8200	VDC	0	0	0	0	0	0	0	0	0	99.97	100.00	99.66	99.90	
CHP-8090-T	WHD	100.00	100.00	99.76	100.00	99.13	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.91
CHD-8013	WHD	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-8014	WHD	100.00	99.47	99.76	99.53	100.00	99.60	99.59	99.34	99.19	99.39	99.46	100.00	99.45	
-8082-T	WHD	100.00	100.00	100.00	100.00	99.21	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.97

NOTE: 0 = Unreliable data or the circuit was deactivated.

TABLE IV

MASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

NOTE: 0 = Undetectable data or the circuit was deactivated.

ORIGINAL PAGE IS
OF POOR QUALITY

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TERMINATING STATION	CIRCUIT NUMBER	MODE	OCT 1982	NOV 1982	DEC 1982	JAN 1983	FEB 1983	MAR 1983	APR 1983	MAY 1983	JUN 1983	JUL 1983	AUG 1983	SEP 1982	OCT 1982	NOV 1982	DEC 1982	JAN 1983	FEB 1983	MAR 1983	APR 1983	MAY 1983	JUN 1983	JUL 1983	AUG 1983	LONG TERM AVERAGE	
Huntsville (NSFC) via SARTCOM	GRDD-8214	WID	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99.83	
Huntsville (NSFC)/NSFC Bldg 23	GD-59042	DAT	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00		
Huntsville (NSFC)/Houston (JSC)	CP-58715	VOC	99.89	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.99	
	-58716	VOC	99.93	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.99	
	-58718	VOC	100.00	99.96	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.98	
	-58719	VOC	100.00	100.00	100.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100.00
	-58835	VOC	0	0	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00		
	-58836	VOC	0	0	0	0	0	0	100.00	100.00	99.59	100.00	99.59	100.00	99.59	100.00	99.59	100.00	99.59	100.00	99.59	100.00	99.59	100.00	99.92		
	-58837	VOC	0	0	0	0	0	0	100.00	100.00	99.19	100.00	99.19	100.00	99.19	100.00	99.19	100.00	99.19	100.00	99.19	100.00	99.19	100.00	99.87		
	-58838	VOC	0	0	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.51	99.94		
	-58839	VOC	0	0	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.99		
	-59257	VOC	100.00	100.00	100.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100.00
	-59297	VOC	100.00	100.00	100.00	100.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100.00
	-59298	VOC	100.00	99.96	100.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99.99
	-59299	VOC	100.00	99.60	100.00	100.00	99.95	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.96	
	-59300	VOC	100.00	99.23	100.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99.74
	-59342	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
	-59374	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	

NOTE: 0 = Unobtainable data or the circuit was deactivated.

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TERMINATING STATION	CIRCUIT NUMBER	MODE	LONG TERM AVERAGE											
			OP MAY 1982	JUN 1982	JUL 1982	AUG 1982	SEP 1982	OCT 1982	NOV 1982	DEC 1982	JAN 1983	FEB 1983	MAR 1983	APR 1983
Huntsville (MSFC)/Houston (350)	GPD-58365	VPI	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
(Cont.)														
Huntsville (MSFC)/Kennedy Space Center (LOC)	GR-58678	VDC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Ibaraki (Tsukuba Space Center)	GDA-58154	VDA	0	0	0	0	0	0	0	0	100.00	100.00	0	0
	-58157	VDA	0	0	0	99.34	100.00	0	0	0	0	0	0	0
	-58619	VDA	0	0	0	0	100.00	99.12	0	0	100.00	100.00	100.00	0
	-58640	VDA	0	0	0	0	100.00	100.00	0	0	100.00	100.00	100.00	0
	GPI-58690	TTY	0	0	0	0	0	0	0	0	99.30	100.00	0	0
Iowa City (Univ of Iowa)/GPI (Bldg 23)	GD-59041	DSB	99.98	100.00	99.94	100.00	100.00	99.98	99.05	99.72	99.80	99.94	100.00	100.00
	-59045	DSB	100.00	100.00	100.00	100.00	100.00	99.98	100.00	100.00	100.00	100.00	100.00	100.00
Kauai via Greenbelt-Barking Sandis (SRCDM 11)	GWD-9024	VDA	99.89	100.00	100.00	100.00	100.00	99.59	97.30	99.44	100.00	91.20	100.00	100.00
	-8025	VDA	100.00	99.84	100.00	99.67	100.00	99.87	97.66	99.44	100.00	100.00	100.00	100.00
	-8080	VDA	99.98	99.25	100.00	100.00	99.33	100.00	97.60	99.29	100.00	100.00	99.92	100.00
	GWD-5633	WID	99.66	69.74	100.00	100.00	100.00	97.58	99.79	100.00	98.70	100.00	100.00	98.79
	-8038-R	WID	99.66	99.96	100.00	100.00	100.00	97.66	99.79	100.00	98.70	100.00	100.00	99.65
	-8039-R	WID	99.99	100.00	100.00	100.00	100.00	97.66	99.79	100.00	98.70	100.00	100.00	99.68
Kauai via Hawley-Sunset Beach	GDA-58423	VDA	99.38	99.59	99.24	99.42	100.00	99.80	77.59	90.41	95.91	99.95	100.00	99.52
(CONT'D)														
Kauai via San Francisco (43 Cable)GDA-58553	VDA	100.00	97.95	99.63	100.00	99.49	97.51	81.92	99.53	97.76	94.30	98.87	98.33	97.11
Kennedy Space Center (CNOSC)	GDA-58418	VDA	100.00	99.91	100.00	100.00	99.75	100.00	100.00	100.00	99.99	100.00	100.00	99.97

NOTE: 0 = Unobtainable data or the circuit was deactivated.

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TERMINATING STATION	CIRCUIT NUMBER	MOE	1982												1983			
			Q1 SAC	May 1982	Jun 1982	Jul 1982	Aug 1982	Sep 1982	Oct 1982	Nov 1982	Dec 1982	Jan 1983	Feb 1983	Mar 1983	Apr 1983	May 1983	Jun 1983	
Kennedy Space Center (KSC) /	CD-58941	DAT	0	0	0	100.00	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
Houston (JSC)	CD-58757	VDA	100.00	100.00	100.00	100.00	99.86	100.00	99.79	100.00	100.00	100.00	100.00	90.34	100.00	99.17		
	-58759	VDA	100.00	100.00	100.00	100.00	100.00	100.00	99.97	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
	-58760	VDA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
	-58761	VDA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
	-58762	VDA	100.00	100.00	100.00	0	0	0	0	0	0	0	0	0	0	0	0	100.00
	-58763	VDA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
	-58764	VDA	100.00	100.00	0	0	0	0	0	0	0	0	0	0	0	0	0	100.00
	-58765	VDA	99.64	100.00	0	0	0	0	0	0	0	0	0	0	0	0	0	99.82
	-58766	VDA	100.00	99.94	99.96	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.99
	-58840	VDA	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
	-58841	VDA	0	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
	-58843	VDA	0	0	0	0	0	100.00	100.00	99.97	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
	CD-58592	VOC	0	0	0	0	0	100.00	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
	-58593	VOC	0	0	0	0	0	0	0	99.25	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.88
	-58772	VOC	100.00	100.00	100.00	0	0	0	0	0	0	0	0	0	0	0	0	100.00
	-58784	VOC	100.00	96.56	100.00	0	0	0	0	0	0	0	0	0	0	0	0	98.85
	-58807	VOC	100.00	100.00	99.89	100.00	100.00	100.00	95.72	100.00	100.00	99.80	100.00	100.00	100.00	100.00	100.00	99.62

ORIGINAL PAGE IS
OF POOR QUALITY

NOTE: 0 = Unobtainable data or the circuit was deactivated.

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TRANSMITTING STATION	CIRCUIT NUMBER	MAR	APR	MAY	JUN	JUL	AGS	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY
Kennedy Space Center (KSC) /																
Houston (HSC) (cont.)																
-58844	VOC	0	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
-58845	VOC	0	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
-58846	VOC	1	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
-58847	VOC	0	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
-58848	VOC	0	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
-58849	VOC	0	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
-58850	VOC	0	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
-58851	VOC	0	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
-58852	VOC	0	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
-58853	VOC	0	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
-58854	VOC	0	0	0	0	0	100.00	99.83	99.97	100.00	99.94	100.00	100.00	100.00	99.97	
-58855	VOC	0	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
-58856	VOC	0	0	0	0	0	100.00	100.00	99.97	100.00	100.00	100.00	100.00	100.00	100.00	
-58857	VOC	0	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
-58858	VOC	0	0	0	0	0	100.00	100.00	95.67	100.00	100.00	100.00	99.51	100.00	99.40	
-58859	VOC	0	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	

NOTE: 0 = Uncertainable data or the circuit was deactivated.

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TERMINATING STATION	CIRCUIT NUMBER	MODE OF SVC	LONG											
			JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	TRIM AVE.
Kennedy Space Center (DK501)	GP-58860	VOC	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Houston (JSC) (Cont.)	-58861	VOC	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	99.85	100.00	99.98
	-58862	VOC	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-58863	VOC	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	99.93	100.00	99.99
	-58864	VOC	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-58865	VOC	0	0	0	100.00	100.00	99.77	100.00	100.00	100.00	100.00	100.00	99.97
	-59185	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-59258	VOC	100.00	100.00	0	0	0	0	0	0	0	0	0	100.00
	-59259	VOC	100.00	100.00	0	0	0	0	0	0	0	0	0	100.00
	-59260	VOC	100.00	100.00	100.00	99.96	100.00	99.85	100.00	100.00	100.00	100.00	100.00	99.98
	-59261	VOC	100.00	99.78	100.00	0	0	0	0	0	0	0	0	99.93
	-59262	VOC	100.00	100.00	100.00	100.00	100.00	99.97	100.00	100.00	100.00	100.00	100.00	100.00
	-59263	VOC	100.00	100.00	100.00	0	0	0	0	0	0	0	0	100.00
	-59264	VOC	97.71	100.00	0	0	0	0	0	0	0	0	0	99.24
	-59265	VOC	98.33	100.00	0	0	0	0	0	0	0	0	0	99.44

NOTE: 0 = Unobtainable data or the circuit was deactivated.

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TERMINATING STATION	CIRCUIT NUMBER	MOE	LONG										
			APR 1982	JUN 1982	JUL 1982	AGO 1982	SEP 1982	OCT 1982	NOV 1982	DEC 1982	JAN 1983	FEB 1983	MAR 1983
Kennedy Space Center (KSC)	GP-59266	VOC	100.00	100.00	100.00	0	0	0	0	0	0	0	0
Houston (HSC) (Cont.)		SAC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
-59267	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.93
-59268	VOC	100.00	96.56	100.00	100.00	99.94	100.00	99.97	100.00	100.00	99.75	100.00	99.81
-59269	VOC	100.00	100.00	100.00	0	0	0	0	0	0	0	0	100.00
-59270	VOC	100.00	100.00	100.00	0	0	0	0	0	0	0	0	100.00
-59271	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.99
-59272	VOC	100.00	100.00	0	0	0	0	0	0	0	0	0	100.00
-59273	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.91	100.00	100.00
-59274	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
-59275	VOC	100.00	100.00	100.00	0	0	0	0	0	0	0	0	100.00
-59276	VOC	100.00	99.97	99.36	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.95
-59277	VOC	100.00	100.00	100.00	100.00	100.00	99.83	100.00	100.00	100.00	100.00	100.00	99.99
-59278	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	96.69	100.00	99.72

NOTE: 0 = Unobtainable data or the circuit was deactivated.

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TERMINATING STATION	CIRCUIT NUMBER	MODE	LONG											
			APR 1982	MAY 1982	JUN 1982	JUL 1982	AUG 1982	SEP 1982	OCT 1982	NOV 1982	DEC 1982	JAN 1983	FEB 1983	MAR 1983
Kennedy Space Center (KSC) /														
Houston (KSC) (Cont.)	-59279	VOC	100.00	100.00	100.00	0	0	0	0	0	0	0	0	0
	-59280	VOC	100.00	100.00	100.00	0	0	0	0	0	0	0	0	0
	-59281	VOC	98.35	100.00	100.00	0	0	0	0	0	0	0	0	0
	-59282	VOC	100.00	100.00	100.00	0	0	0	0	0	0	0	0	0
	-59283	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-59284	VOC	100.00	99.92	100.00	0	0	0	0	0	0	0	0	0
	-59294	VOC	100.00	100.00	100.00	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-59295	VOC	100.00	100.00	100.00	0	0	0	0	0	0	0	0	0
	-59301	VOC	100.00	100.00	100.00	0	0	0	0	0	0	0	0	0
Kennedy Space Center (CIF) /														
Houston (KSC)	GD-58247-R	DMT	100.00	100.00	100.00	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	GM-58418	VDA	0	0	0	0	0	0	0	0	0	0	0	0
	GD-59138	DMT	99.98	100.00	100.00	100.00	100.00	100.00	99.98	100.00	100.00	100.00	100.00	100.00
Kourou (French Guiana)	GP-58649	VDC	0	0	0	0	100.00	100.00	0	0	0	0	0	0
	GM-58646	VDA	0	0	0	100.00	100.00	0	0	0	0	0	0	0
	-58647	VDA	0	0	0	100.00	100.00	0	0	0	0	0	0	0
	-58648	VDA	0	0	0	100.00	100.00	0	0	0	0	0	0	0

NOTE: 0 = Unobtainable data or the circuit was deactivated.

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

NOTE: 0 = Unreliable data or the circuit was deactivated.

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TERMINATING STATION	CIRCUIT NUMBER	MODE OP	MAY 982	JUN. 1982	JUL. 1982	SEP 1982	OCT 1982	NOV. 1982	DEC. 1982	JAN. 1983	FEB. 1983	MAR. 1983	APR. 1983	LONG TERM AVG	
Madrid via Antwerp- Belgium (NETSTAN 6 IS IV A P-4)	MJI-199	WDA	98.63	99.54	98.12	99.52	98.39	99.77	99.31	98.95	98.67	99.03	99.57	98.59	98.97
Madrid via Traf-5 Cable	GDN-58456	WDA	99.26	99.01	98.08	99.33	98.55	99.87	99.65	99.50	99.67	99.34	99.00	98.11	99.11
	-58651	WDA	99.73	99.36	98.95	99.73	98.99	99.59	99.55	99.41	99.80	99.13	99.49	99.06	99.40
	-58652	WDA	99.29	99.54	99.14	99.75	98.06	98.14	99.11	99.76	99.33	99.75	99.41	99.65	99.24
Madrid via Traf-6 Cable	GDN-58447	WDA	99.78	98.40	99.39	99.71	99.65	99.64	99.48	99.51	99.91	99.44	99.31	99.60	99.54
	-59052	WDA	99.96	98.55	99.65	99.76	99.97	99.85	99.88	99.43	99.18	99.38	99.75	99.80	99.60
	-59053	WDA	99.93	98.29	100.00	99.68	99.92	99.84	99.91	99.99	99.81	99.44	99.56	99.71	99.67
Madrid STAN/Perbledo	BNW-50	WDA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-51	WDA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-52	WDA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-53	WDA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-54	WDA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-55	WDA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-56	WDA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-57	WDA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-58	WDA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

NOTE: 0 = Unobtainable data or the circuit was deactivated.

TABLE IV
NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TELEINTELLIGENT STATION	CIRCUIT NUMBER	MONTH	LONG TERM												
			APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
Madrid STN/Robledo (Cont.)	RSB-1	WBD	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-2	WBD	100.00	100.00	96.73	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.73
	-3	WBD	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-4	WBD	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Madrid via DSS-61 & DSS-63/	RSB-1	WOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Robledo	-2	WOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-3	WOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-13	WOC	100.00	99.87	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-14	WOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-61	WOC	100.00	95.36	99.57	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.56
	-62	WOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-63	WOC	100.00	100.00	97.32	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.70
	-64	WDA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-65	WDA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-66	WOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-67	WOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Madrid DSS-63/Robledo	RSB-11	WBD	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-12	WBD	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

ORIGINAL PAGE IS
OF POOR QUALITY

NOTE: 0 = Unobtainable data or the circuit was deactivated.

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

ORIGINAL PAGE IS
OF POOR QUALITY

NOTE 0 = Unobtainable data or the circuit was deactivated.

TABLE IV

NASCOM NETWORK: CIRCUIT AVAILABILITIES (CONT'D)

TRANSMITTING STATION	CIRCUIT NUMBER	MODE	LONG												
			CP	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	
Neritt Island/Houston (NSC)	GD-5828	VIA	100.00	100.00	100.00	100.00	99.96	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
Woffett Field (AMC)/Dayton FMC	GD-8085-47	WID	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
via SATELLITE															
Woffett Field (Ames Research Center)/Pasadena NSC	GD-58268	VDA	100.00	100.00	100.00	100.00	100.00	100.00	99.52	99.38	100.00	97.81	97.34	99.50	
	-58269	VDA	99.70	100.00	100.00	100.00	99.81	100.00	99.84	97.19	99.74	97.81	97.56	99.31	
	-58271	VDA	97.7	100.00	100.00	97.97	100.00	99.81	100.00	99.70	99.88	97.81	100.00	99.31	
	-58324	VDA	100.00	100.00	100.00	100.00	100.00	100.00	102.91	100.00	100.00	97.81	100.00	98.39	
	-58336	VDA	98.73	99.72	100.00	99.33	97.63	100.00	100.00	95.57	94.83	100.00	94.67	100.00	
	-58379	VDA	100.00	99.44	97.78	100.00	99.78	100.00	100.00	99.84	96.73	98.22	97.36	99.51	
	-58632	VDA	100.00	99.93	99.60	98.21	100.00	100.00	99.82	99.76	92.61	100.00	95.71	98.40	
	GP-58226	VDC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.97	
	NETP-3013	PTV	95.70	98.13	100.00	100.00	97.22	100.00	100.00	99.82	99.56	99.89	97.16	99.52	
	Woffett (AMC)/Gloucester Creek	GD-8020-41	WID	98.72	99.78	99.66	98.49	99.32	99.25	99.70	100.00	99.99	100.00	99.62	100.00
via SATELLITE															
Woffett (AMC)/Pasadena NSC	GP-58215	VDC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
Instrument Peak (AMC)/Pasadena NSC	721-350	PTV	100.00	100.00	100.00	98.89	100.00	100.00	0	0	0	0	0	99.82	
via SATELLITE															
Plant Lamson & Pt. Hatch, 2	GP-58494-T	PTV	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
New York (Courant Inst.)/NSC	GD-58430	LNT	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0	0	0	100.00	
New York (GIFS)	GD 58584	IDS	98.74	100.00	99.95	100.00	100.00	100.00	100.00	99.83	100.00	100.00	100.00	99.93	

NOTE: 0 = Unobtainable data or the circuit was deactivated.

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TERMINATING STATION	CIRCUIT NUMBER	MONTH												LONG DIST
		APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	
Octave (PAC)	CD-5925	777	99.69	100.00	100.00	100.00	100.00	100.00	99.94	100.00	100.00	100.00	100.00	99.97
Palomar (PAC)/Reserve MSC	732-7130	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Palo Alto (Lockheed)/MSC	CD-59046	006	99.77	99.97	99.59	99.77	100.00	100.00	99.19	100.00	100.00	99.94	100.00	99.91
(Bldg. 23)														
Palo Alto MSC		00-58320	0	0	0	0	0	0	0	0	0	0	0	99.85
CD-58235		VDA	99.21	99.39	99.05	99.81	99.86	100.00	99.97	99.83	99.87	100.00	97.78	99.96
-58236		VDA	97.50	100.00	99.89	100.00	99.99	100.00	99.38	96.90	99.96	97.78	100.00	99.26
-58237		VDA	97.62	99.56	99.81	100.00	100.00	100.00	99.94	99.91	100.00	100.00	97.78	100.00
-58460		VDA	100.00	99.81	99.70	99.81	100.00	100.00	99.69	100.00	100.00	99.54	99.96	99.97
-58601		VDA	99.23	99.69	99.91	99.70	100.00	100.00	99.90	100.00	97.13	100.00	100.00	99.55
-58532		005	99.20	99.48	99.94	97.77	99.94	99.49	99.75	100.00	100.00	99.56	100.00	99.54
-58620		VDA	99.74	98.94	99.27	97.35	99.97	100.00	100.00	99.91	100.00	100.00	97.78	99.79
-58623		VDA	99.92	98.97	96.18	99.23	99.24	100.00	100.00	99.83	99.26	99.75	97.78	99.61
-58624		DIS	99.84	98.43	99.45	96.09	100.00	100.00	100.00	29.91	100.00	99.61	97.78	99.70
-58646		VDA	99.57	100.00	98.27	99.36	100.00	100.00	99.34	100.00	96.44	100.00	100.00	99.63
-58667		VDA	99.71	99.36	96.65	99.56	99.43	100.00	99.30	100.00	99.37	99.89	99.73	100.00
-58687		VDA	100.00	99.14	99.52	99.85	100.00	100.00	100.00	99.80	100.00	99.94	97.78	100.00
-58692		VDA	99.71	100.00	100.00	99.60	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.55
-58694		VDA	99.00	99.82	99.28	99.82	99.94	100.00	100.00	99.95	99.96	99.57	97.78	99.79
CD-58301		VOC	0	0	0	0	0	0	0	0	0	0	0	99.81
-58435		VOC	100.00	100.00	100.00	100.00	100.00	100.00	99.97	100.00	100.00	100.00	100.00	99.92
-58476		VOC	99.73	99.86	100.00	99.46	100.00	99.97	95.50	99.60	100.00	99.76	97.78	99.84

NOTE: 0 = Unobtainable data or the circuit was deactivated.

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TERMINATING STATION	CIRCUIT NUMBER	MODE	CP	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	LONG TERM
Pasadena WSCC via Satcom	QND-5372	WCD	99.72	100.00	99.81	99.63	99.93	99.40	99.45	99.76	98.37	99.34	98.90	98.53		
	-8021	WCD	99.57	99.93	100.00	99.40	100.00	99.94	99.33	99.64	99.58	98.27	99.09	100.00	99.56	
	-8022	WCD	99.80	99.93	100.00	99.69	99.19	99.69	99.66	99.85	100.00	98.46	99.42	100.00	99.64	
Pasadena WSCC/Houston (MSC)	QDA-59151	VDA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
Patrick AFB/Houston (MSC)	QDA-58842	VDA	100.00	99.44	100.00	100.00	100.00	100.00	99.48	100.00	100.00	100.00	100.00	100.00	99.91	
	-59155	VDA	100.00	100.00	100.00	0	0	100.00	100.00	90.44	100.00	100.00	100.00	99.96	100.00	
Platteville (POMAS)/Pasadena WSCC	QDA-58999	TTV	100.00	100.00	100.00	100.00	99.24	100.00	0	0	0	0	0	0	100.00	
Ponce De Leon (PDL)/Merritt Island (PMLA)	ALAP-87004	VDA	100.00	99.38	100.00	99.33	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
	-87005	VDA	100.00	100.00	100.00	99.33	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
	-87006	VDA	100.00	100.00	100.00	99.33	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
	-87007	VDA	100.00	100.00	100.00	99.33	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
	TTV-87209	TTV	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
	VAD-87252	VID	100.00	100.00	100.00	100.00	100.00	100.00	99.60	100.00	100.00	100.00	100.00	100.00	99.97	
	VAD-54501	VID	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
	-87251	VID	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
Quincy (POMAS)/Pasadena WSCC	QDA-357	TTV	100.00	99.67	96.83	100.00	100.00	99.90	0	0	0	0	0	0	99.40	
Quito via Iteam (IS IV & P-1)	QDA-58150	VDA	0	0	0	0	0	0	0	0	0	0	0	0	0	

NOTE: 0 = Unobtainable data or the circuit was deactivated.

ORIGINAL PAGE IS
OF POOR QUALITY

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TERMINATING STATION	CIRCUIT NUMBER	CODE OF SPC	MONTH												LONG TERM AVER	
			MAY 1982	JUN 1982	JUL 1982	AUG 1982	SEP 1982	OCT 1982	NOV 1982	DEC 1982	JAN 1983	FEB 1983	MAR 1983	APR 1983		
Redondo Beach (MM CTV)	CD-58281	DDS	0	0	0	0	0	0	0	0	0	0	0	0	99.47	
	-58905	DRF	0	0	97.72	99.66	0	0	0	0	0	0	0	0	98.69	
	-58906	DDS	0	0	98.26	100.00	0	0	0	0	0	0	0	0	99.13	
	GP-58233	VOC	0	0	0	0	0	0	0	0	100.00	100.00	98.79	99.88	99.67	
	-58903	VOC	0	0	100.00	100.00	0	0	0	0	0	0	0	0	100.00	
Riverdale (Sperry-Univac)	74FD-7146	DDS	0	0	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
Hotà NS/Mark 1d	XPBR-1	VDA	0	100.00	100.00	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
Santiago via Etan (IS IV A P-1)	CDN-58454	VDA	0	100.00	100.00	0	0	99.93	93.26	100.00	99.63	99.86	100.00	99.86	99.84	
	-58471	VDA	99.87	99.97	99.59	100.00	99.97	39.69	100.00	99.93	100.00	100.00	100.00	99.72	100.00	99.90
	-58831	VDA	99.90	99.77	100.00	100.00	99.99	99.93	99.79	100.00	100.00	99.97	99.70	99.93	99.92	
Santiago via Etan (WESTAR 6 IS IV A P-3)	L-11329	WD	98.95	100.00	99.79	99.90	99.92	99.67	99.64	100.00	99.74	100.00	100.00	99.35	99.75	
	WJU-190-R	WD	0	100.00	99.74	0	0	99.59	100.00	100.00	100.00	100.00	100.00	99.39	99.86	
	-191-T	WD	0	100.00	100.00	0	0	99.95	100.00	100.00	100.00	100.00	100.00	99.45	99.91	
Sioux Falls (EADS)	CD-58420	DDS	100.00	100.00	100.00	100.00	100.00	100.00	99.25	100.00	97.93	99.94	97.66	99.57		
	CDN-58421	VDA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.86	100.00	100.00	99.58	99.35	
Sioux Falls (EADS) via SATCOM	GPB-9045-T	WD	100.00	100.00	100.00	100.00	98.21	100.00	100.00	100.00	99.66	99.10	100.00	99.75		
	CDN-9044-T	WD	100.00	100.00	100.00	100.00	98.21	100.30	100.00	100.00	99.66	99.10	100.00	99.75		

NOTE: 0 = undeterminable data or the circuit was deactivated.

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

ORIGINAL PAGE IS
OF POOR QUALITY

NOTE: 0 = Unobtainable data or the circuit was deactivated.

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE IV
NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TELEMATING STATION NUMBER	CIRCUIT NUMBER	MODE OF SVC	LONG													
			MAX 1982	JUN 1982	JUL 1982	AUG 1982	SEP 1982	OCT 1982	NOV 1982	DEC 1982	JAN 1983	FEB 1983	MAR 1983	APR 1983	MAY 1983	JUN 1983
Toulouse (INRS)/Madrid	TUR-1	TTR	99.98	98.22	99.79	99.91	100.00	100.00	100.00	100.00	100.00	99.66	99.65	99.70	99.76	
	RPTR-101	VDA	0	0	0	0	100.00	100.00	100.00	100.00	100.00	99.97	100.00	100.00	99.81	99.97
	-102	VDA	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.88	99.99
Valley Forge (King of Prussia)	GDA-58691	VDA	0	0	0	0	0	0	0	0	0	0	0	0	0	100.00
	-58699	VDA	0	0	0	0	0	0	0	0	0	0	0	0	0	97.56
	DSU94-59219	WDD	100.00	0	0	0	0	0	0	0	0	0	0	0	0	100.00
Vandenberg AFB (NSC)	QDA24-58644	DOS	0	100.00	99.87	0	0	0	0	0	0	0	0	0	0	99.94
	-58645	WDD	0	0	0	0	0	0	0	0	0	95.78	100.00	0	0	97.56
GD-58380	DAT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	-58589	DAT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	GDA-58405	DOS	100.00	100.00	100.00	100.00	100.00	99.84	100.00	100.00	99.43	100.00	100.00	99.94	100.00	100.00
	-58459	DOS	100.00	100.00	100.00	100.00	100.00	99.56	99.80	100.00	100.00	99.65	99.92	100.00	99.91	100.00
	-58469	DOS	100.00	100.00	100.00	100.00	99.97	99.90	99.84	100.00	100.00	98.84	100.00	100.00	99.88	100.00
Vandenberg AFB (NSC)/El Paso (FAA)	GDA-59195	VDA	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	-59196	VDA	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	-59197	VDA	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NOTE: 0 = Unobtainable data or the circuit was deactivated.

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TERMINATING STATION	CIRCUIT NUMBER	MODE	Q	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	JUN	LONG	
																	1982	
Vandenberg AFB (NSMC) / Pasadena	GDA-58721	VDA	100.00	100.00	97.51	100.00	100.00	100.00	100.00	100.00	95.26	100.00	99.53	100.00	99.36	1983	1983	TEAM AVER.
WDC	-58722	VDA	100.00	100.00	97.74	101.00	100.00	100.00	98.50	100.00	100.00	100.00	100.00	100.00	99.79	100.00	99.67	
	-58723	VDA	100.00	100.00	97.56	100.00	100.00	100.00	98.19	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.65	
GP-58248	WOC	100.00	99.49	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.72	100.00	100.00	100.00	99.89	100.00	99.93	
	-58737	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
	-58790	VOC	100.00	100.00	100.00	99.96	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.99	
	-58791	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.89	
	-58792	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
	-58793	VOC	99.52	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.99	
20R-41	TTY	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
73D-1364	TTY	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.56	
	-1365	TTY	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	89.88	100.00	99.76	94.69	100.00	98.61	
	-1366	TTY	100.00	100.00	100.00	99.44	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	98.59	
	-1367	TTY	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.56	
	-1368	TTY	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.56	

NOTE: 0 = Unobtainable data or the circuit was deactivated.

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TERMINATING STATION	CIRCUIT NUMBER	MOB OF SVC	NOV	DEC	JAN	FEB	MAR	APR	LONG	
			MAY	JUN	SEP	OCT	NOV	DEC	TERM AVE	
Vanderberg AFB (NSMC)/Pasadena	70D-1374	TTV	100.00	100.00	100.00	99.67	100.00	100.00	94.43	100.00
	-1379	TTV	100.00	100.00	100.00	99.96	100.00	100.00	94.43	100.00
Villafranca (Vilaseca)/Madrid	DPW-1	VDA	100.00	100.00	100.00	100.00	100.00	100.00	94.69	100.00
	-2	VDA	100.00	100.00	100.00	99.91	100.00	100.00	100.00	100.00
-3	VDA	0	0	0	0	0	0	0	0	0
	-4	VDA	0	0	0	0	0	0	0	0
Wallops Island	GDA-58299	VDA	99.80	99.96	100.00	99.86	100.00	100.00	100.00	100.00
	-58401	VDA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
-58427	VDA	100.00	100.00	100.00	99.16	100.00	100.00	100.00	100.00	100.00
	-58540	VDA	100.00	100.00	100.00	99.91	100.00	100.00	99.94	100.00
-58541	VDA	100.00	99.59	100.00	99.56	100.00	99.35	100.00	100.00	100.00
	-58986	VOC	100.00	99.91	100.00	0	0	0	0	0
-58987	VDA	100.00	100.00	100.00	0	0	0	0	0	0
	-58988	VDA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
NSP-3313	TTV	100.00	99.54	99.75	99.48	100.00	100.00	100.00	100.00	100.00
	-3314	TTV	100.00	99.54	100.00	100.00	100.00	100.00	100.00	100.00

NOTE: 0 = Undatainable data or the circuit was deactivated.

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TERMINATING STATION	CIRCUIT NUMBER	NOTE OF SAC	MOE	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	LONG
			1982	1982	1982	1982	1982	1982	1982	1982	1982	1983	1983	1983	1983	1983
Washington D.C. (ISOC)	74FD-7248	DAT	0	0	0	0	0	0	0	0	0	0	0	0	0	97.11
	-7249	VDA	0	0	0	0	0	0	0	0	0	0	0	0	0	100.00
	74FD-25139	VOC	0	0	0	0	0	0	0	0	0	0	0	0	0	100.00
	-25277	VOC	0	0	0	0	0	0	0	0	0	0	0	0	0	100.00
	-42809	VOC	0	0	0	0	0	0	0	0	0	0	0	0	0	100.00
	-42810	VOC	0	0	0	0	0	0	0	0	0	0	0	0	0	100.00
	-42811	VOC	0	0	0	0	0	0	0	0	0	0	0	0	0	99.29
	-42812	VOC	0	0	0	0	0	0	0	0	0	0	0	0	0	100.00
	-42813	VOC	0	0	0	0	0	0	0	0	0	0	0	0	0	100.00

NOTE: 0 = Unobtainable data or the circuit was deactivated.

ORIGINAL PAGE IS
OF POOR QUALITY

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TERMINATING STATION	CIRCUIT NUMBER	MONTH												LONG TERM AVE
		OCT 1982	MAY 1982	JUN 1982	JUL 1982	AUG 1982	SEP 1982	OCT 1982	NOV 1982	DEC 1982	JAN 1983	FEB 1983	MAR 1983	
Washington D.C. (COMSAT Launch Control Center)	74FD-7230	005	100.00	100.00	0	0	0	100.00	0	0	0	0	0	100.00
	-7232	005	0	0	0	0	0	0	100.00	0	0	0	0	100.00
	-7233	005	0	0	0	0	0	0	100.00	0	0	0	0	100.00
	-7234	005	0	0	0	0	0	0	100.00	0	0	0	0	100.00
	-7235	005	0	0	0	0	0	0	100.00	0	0	0	0	100.00
	-7236	005	0	0	0	0	0	0	100.00	0	0	0	0	100.00
	74PL-42802	005	0	0	0	0	96.85	0	0	0	0	0	0	96.85
	-42803	005	0	0	0	0	97.95	0	0	0	0	0	0	97.95
	-42804	005	0	0	0	0	100.00	0	0	0	0	0	0	100.00
	-42805	005	0	0	0	0	0	0	0	0	0	0	0	0
	-42806	005	0	0	0	0	97.95	0	0	0	0	0	0	97.95
Washington D.C. (Dept of State)	74PL-26469	005	100.00	100.00	100.00	91.97	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.31
	-26470	005	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-26471	005	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Washington D.C. (NASA HQ)	74AP-5128	005	0	0	0	0	0	0	0	99.95	100.00	6	0	99.95
	-5129	005	0	0	0	0	0	0	0	0	99.92	100.00	0	99.92

NOTE: 0 = Unobtainable data or the circuit was deactivated.

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TERMINATING STATION	CIRCUIT NUMBER	MOE OF SVC	MAY 1982	JUN 1982	JUL 1982	AUG 1982	SEP 1982	OCT 1982	NOV 1982	DEC 1982	JAN 1983	FEB 1983	MAR 1983	APR 1983	JUN 1983	JUL 1983	LONG TERM AVER
Washington D.C. (NASA HQ)																	
(Cont.)	746B-237	VID	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7423-95	VOC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	-827-T	VOC	100.00	0	0	0	0	0	0	0	0	0	0	0	0	0	100.00
	-828-T	VOC	100.00	0	0	0	0	0	0	0	0	0	0	0	0	0	100.00
	-3202-T	VOC	100.00	0	0	0	0	0	0	0	0	0	0	0	0	0	100.00
	-25296-T	VOC	100.00	100.00	100.00	100.00	100.00	100.00	99.54	100.00	100.00	100.00	98.79	95.51	98.65		
	74PL-25131	VOC	0	0	0	0	0	0	0	0	0	0	0	96.36	100.00	98.18	
	-25132	VOC	0	0	0	0	0	0	0	0	0	0	0	100.00	100.00	100.00	
	-25350	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
Washington D.C. (White House)																	
Washington (GPOC)/Madrid	74NH-5128	VID	0	0	0	0	0	0	0	0	0	0	0	99.20	100.00	100.00	99.50
	74PL-26186	VOC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	1PNS-1	VDA	98.66	100.00	100.00	99.91	100.00	100.00	99.66	99.91	99.67	99.41	100.00	100.00	100.00	100.00	99.33
	TCPL-1	TTV	100.00	98.27	99.99	99.91	100.00	99.87	100.00	99.73	97.95	99.66	96.19	99.39	99.25		
	XPNS-1	VDA	100.00	92.11	99.22	100.00	100.00	99.95	99.64	98.32	99.72	100.00	0	99.40			

NOTE: 0 = Unobtainable data or the circuit was deactivated.

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TERMINATING STATION	CIRCUIT NUMBER	MOX	LONG TERM AVAIL											
			APR 1982	MAY 1982	JUN 1982	JUL 1982	AUG 1982	SEP 1982	OCT 1982	NOV 1982	DEC 1982	JAN 1983	FEB 1983	MAR 1983
Western (SPAR)/Houston (JSC)	GP-59313	VOC	100.00	100.00	100.00	0	0	0	0	0	0	0	0	0
White Sands (T1ESS/NORT)	-59314	VOC	100.00	100.00	100.00	0	0	0	0	0	0	0	0	0
GD-58496	TTT	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.67	100.00	100.00	99.91	100.00	99.95
GA-58578	VDA	0	0	0	0	0	0	100.00	100.00	99.55	100.00	100.00	100.00	99.46
-58890	VDA	0	0	0	99.94	100.00	99.15	99.25	100.00	100.00	99.64	99.88	99.50	99.71
-58891	VDA	0	0	0	99.94	100.00	100.00	99.18	100.00	100.00	99.56	99.83	99.15	99.74
GP-58487	VOC	99.88	99.63	100.00	99.95	99.67	100.00	99.10	99.54	100.00	100.00	99.83	98.36	99.58
-58618	VOC	0	0	0	0	0	100.00	99.29	99.88	100.00	100.00	99.65	99.49	99.76
-58619	VOC	0	0	0	0	0	0	100.00	99.29	100.00	100.00	99.82	99.53	99.81
-58887	VOC	0	0	0	0	J	100.00	99.98	99.25	100.00	99.96	99.64	99.88	99.70
-58888	VOC	0	0	0	0	0	100.00	99.40	99.25	100.00	100.00	99.64	98.39	99.19
-58889	VOC	0	0	0	0	0	100.00	100.00	99.29	99.87	95.87	99.64	99.87	99.15
GP-58220-T	TTT	0	0	0	0	99.48	100.00	100.00	99.73	100.00	100.00	100.00	100.00	99.90

NOTE: 0 = Unobtainable data or the circuit was deactivated.

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TERMINATING STATION	CIRCUIT NUMBER	GND-8079	VDA	0	99.22	99.92	100.00	99.93	100.00	99.97	99.94	0	100.00	99.75	100.00	99.87	LINE
					MAY SNC	JUN 1982	JUL 1982	AGS 1982	SEP 1982	OCT 1982	NOV 1982	DEC 1982	JAN 1983	FEB 1983	MAR 1983	APR 1983	JUN 1983
White Sands (TMSS/AGS) via EATLUM																	
	-8192	VDA	0	0	0	0	0	0	0	0	0	0	100.00	99.96	99.61	100.00	99.85
	GND-8077	VDC	100.00	94.27	99.97	99.94	99.86	100.00	99.45	100.00	99.90	100.00	99.70	100.00	99.42		
	-8078	VDC	100.00	94.25	99.99	99.81	99.97	99.88	99.97	99.93	99.94	100.00	99.75	100.00	99.46		
	-8193	VDC	0	0	0	0	0	0	0	0	0	0	100.00	100.00	99.75	100.00	99.94
	-8194	VDC	0	0	0	0	0	0	0	0	0	0	99.80	99.97	99.67	99.97	99.85
	GND-8016	WDD	99.95	100.00	99.65	99.32	99.57	100.00	99.91	99.28	99.61	100.00	99.62	100.00	99.74		
	GND-8015	WDD	99.91	100.00	100.00	99	99.73	99.82	99.65	99.60	99.92	99.95	99.56	0	99.83		
Houston (JSC) via SASCOM																	
	CRX-8211	WDD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	97.35
	GPT-8208	WDD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	97.35
	GND-8015	WDD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	97.35
White Sands (TMSS/AGS) via Houston (JSC) Broadcast																	
	White Sands (TMSS/AGS)																
White Sands (TMSS) via SASCOM																	
	CD-58072	TTT	100.00	100.00	0	0	0	0	0	0	0	0	0	0	0	100.00	102.00
	-58927-T	TTT	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	102.00
	GDA-58975	VDA	100.00	99.85	100.00	100.00	100.00	100.00	99.94	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.98
	GT-54595	TTT	0	0	0	0	0	0	100.00	96.15	100.00	99.58	99.75	100.00	100.00	100.00	99.35

NOTE: 0 = Unobtainable data or the circuit was deactivated.

ORIGINAL PAGE IS
OF POOR QUALITY

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE IV
NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TERMINATING STATION (JNL)	CIRCUIT NUMBER	NOTE	LONG												TERM AVER	
			OP SMC	MAY 1982	JUN 1982	JUL 1982	AGS 1982	SEP 1982	OCT 1982	NOV 1982	DEC 1982	JAN 1983	FEB 1983	MAR 1983	APR 1983	
White Sands (NM) / Houston	GD-59465	TTY	0	0	0	0	0	0	97.50	100.00	100.00	100.00	100.00	100.00	100.00	99.60
	GD-58070	VDA	0	0	0	0	0	100.00	100.00	99.70	100.00	100.00	100.00	100.00	100.00	99.96
	-58071	VDA	0	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-58078	VDA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	-58080	VDA	100.00	99.91	100.00	100.00	97.41	100.00	96.50	100.00	100.00	100.00	100.00	100.00	100.00	99.49
	-58038	VDC	100.00	99.95	100.00	0	0	0	0	0	0	0	0	0	0	99.98
	-58039	VDC	100.00	100.00	0	0	0	0	0	0	0	0	0	0	0	100.00
	-58040	VDC	100.00	99.77	100.00	0	0	0	0	0	0	0	0	0	0	99.92
	(2-58441)	VDC	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	98.93
	-58613	VDC	100.00	100.00	0	0	0	0	0	0	0	0	0	0	0	100.00
	-58634	VDC	100.00	100.00	0	0	0	0	0	0	0	0	0	0	0	100.00
	-58635	VDC	100.00	99.91	100.00	0	0	0	0	0	0	0	0	0	0	99.97
	-58636	VDC	100.00	100.00	0	0	0	0	0	0	0	0	0	0	0	100.00
	-58637	VDC	100.00	100.00	0	0	0	0	0	0	0	0	0	0	0	100.00
	-58674	VDC	0	0	0	0	100.00	100.00	99.70	100.00	100.00	100.00	100.00	100.00	100.00	99.96
	-58675	VDC	0	0	0	0	100.00	100.00	99.63	100.00	100.00	100.00	100.00	100.00	100.00	99.95

NOTE: 0 = Unobtainable data or the circuit was deactivated.

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE IV
NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TERMINATING STATION	CIRCUIT NUMBER	MILE	LONG												
			APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	JUN
White Sands (NEAR) Houston	GP-59454	VDC	0	0	0	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00
(JSC Cont.)															
	-59455	VDC	0	0	0	0	0	0	0	100.00	100.00	100.00	99.91	100.00	99.99
	-59456	VDC	0	0	0	0	0	0	0	100.00	100.00	100.00	99.40	99.91	99.89
	-59457	VDC	0	0	0	0	0	0	0	100.00	100.00	100.00	87.80	100.00	97.83
	-59458	VDC	0	0	0	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00
	-59459	VDC	0	0	0	0	0	0	0	100.00	100.00	100.00	99.64	100.00	99.95
	-59460	VDC	0	0	0	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00
	-59461	VDC	0	0	0	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00
	-59462	VDC	0	0	0	0	0	0	0	100.00	100.00	100.00	97.95	100.00	97.95
	-59463	VDC	0	0	0	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00
	-59464	VDC	0	0	0	0	0	0	0	100.00	100.00	100.00	100.00	100.00	100.00
(DTU-800025-T MID)															
White Sands (NEAR) Vandenberg	DTU-800025-T MID	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APB (NEC)															
	GP-59201	VDC	100.00	100.00	0	0	0	0	0	0	0	0	0	0	100.00
	-59202	VDC	100.00	100.00	0	0	0	0	0	0	0	0	0	0	100.00

NOTE: 0 = Unobtainable data or the circuit was deactivated.

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE IV

NASCOM NETWORK CIRCUIT AVAILABILITIES (CONT'D)

TERMINATING STATION	CIRCUIT NUMBER	MODE	TIME											
			APR 1962	MAY 1962	JUN. 1962	JUL. 1962	AUG. 1962	SEP. 1962	OCT. 1962	NOV. 1962	DEC. 1962	JAN. 1963	FEB. 1963	MAR. 1963
Yarzagaibe (Public)/Cartaxa	MCF-601	TTV	100.00	100.00	99.87	99.80	99.90	100.00	99.92	100.00	100.00	100.00	99.90	99.91
	MCY-501	VIA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.89
	-602	VIA	100.00	100.00	100.00	99.41	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.89
	CP-59011	VOC	100.00	100.00	0	0	0	0	0	0	0	0	0	99.94
	-59012	VOC	100.00	100.00	0	0	0	0	0	0	0	0	0	100.00
	-59284	VOC	100.00	100.00	0	0	0	0	0	0	0	0	0	100.00
	-59285	VOC	100.00	99.91	99.87	0	0	0	0	0	0	0	0	99.91
	-59286	VOC	100.00	100.00	0	0	0	0	0	0	0	0	0	100.00
	-59288	VOC	100.00	100.00	0	0	0	0	0	0	0	0	0	100.00
	-59290	VOC	100.00	100.00	0	0	0	0	0	0	0	0	0	100.00
	-59291	VOC	100.00	100.00	0	0	0	0	0	0	0	0	0	100.00
	-59296	VOC	100.00	100.00	0	0	0	0	0	0	0	0	0	100.00

NOTE: 0 = Undataable data or the circuit was deactivated.

CIRCUITS WITH LOW AVAILABILITIES

ORIGINAL PAGE IS
OF POOR QUALITY

GWDD-5372, Pasadena via Satcom.

The circuit has not met the network objective for the last six consecutive months. The wideband link had 3 interruptions in April totalling 7:53 hours. A large percentage of outages are attributed to leased system faults in the Pasadena area. For the last 6 months the average availability of -5372 is 99.20%. During this period there have been 20 CMA's and a MTTRes of 1.69 hours.

TGFR-1, Wessling/Madrid.

The teletype link has failed to surpass the objective for five consecutive months. Its 12 month long term mean is 99.25% which shows sub-standard operational capabilities. Historical maintenance data indicates that carrier problems exist on the Madrid/Frankfurt segment. The circuit achieved a 99.39% availability in April showing 5 CMA's and 4:24 outage hours.

GDA-58269, Moffett/Pasadena.

The narrowband circuit has exhibited four consecutive months of low availability. One outage occurred in April for 17:35 hours due to a foreign tone on the line. The problem was cleared while in the process of checking. Its 12 month long term mean is 99.31%. The circuit has shown a small number of interruptions however the restoration times appear lengthy.

GDA-58379, Moffett/Pasadena.

There were two outages in April for 3:30 hours and a calculated availability of 99.51%. It has not met the 99.80% objective for four consecutive months. It appears that the circuit has frequent high bit error rates and cannot be isolated to segment or system. It is suggested that tests be conducted to determine its operational characteristics.

SELECTED CIRCUIT ANALYSIS

ORIGINAL PAGE IS
OF POOR QUALITY

Introduction

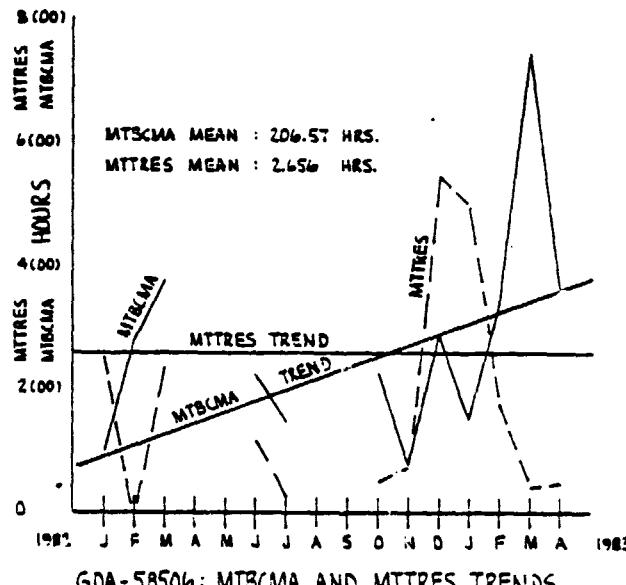
In this section the Network Review and Analysis Group has presented selected circuits that have expressed low availability parameters aperiodically. The long term availability, corrective-maintenance-actions (CMA's), and extended outage hours were used in determining its special presentation and analysis. The individual circuits shown in this section were found to be contributing agents that affected the overall NASCOM Network Availability trend, shown in Figure 2, and include respective statistics on predominant failure categories. These circuits either failed to meet the NASCOM network objective of 99.80% or the networks MTTRES of 2.92 hours, or both. In addition, a Chi Square Distribution was used (point estimate) using a 50% confidence limit and 2 degrees of freedom when the circuit had operational hours but experienced no (CMA's) for that month. Future reports will present selected circuits that fail to meet established standards or have deteriorating operational characteristics.

GDA-58506. Canberra via Jamesburg

The data shown in the table presents failure activity for 16 months, January 1982 through April 1983. The link did not support network operations during April, May, August, and September 1982. There were 6496.0 operational hours, 31 CMA'S, and 61:54 outage hours. The circuit's 16 month mean-time-to-restore (MTTRes) is 1.996 hours and is better than the networks' baseline of 2.92 hours.

The statistics were gathered in an attempt to isolate problem areas due to aperiodic low availabilities. The circuit has failed to meet the network objective eight of the twelve months and has established an aggregate low parameter of 99.05% which indicates a condition not suitable for mission support. Since January 1982, twenty of the thirty-one CMA's are attributed to the Australian region and another three on the GSFC/San Francisco segment.

Data was plotted from the statistics in the table and is presented in graphical form. Both trends appear favorable for the 16 month period excluding 4 months that were not plotted. The restore mean (during its 12 month operation) of 2.656 hours is better than the established baseline aforementioned.



GDA-58506: MTBCMA AND MTTRES TRENDS.

GDA-58506, CANBERRA via JAMESBURG

MO./YR.	OP. HOURS	CMA's	MTBCMA	OUT. HOURS	MTTRES	AVAIL.
JAN 82	480.0	5	96.0	12:30	2.50	97.40
FEB 82	192.0	0	277.05	0	0	100.00
MAR 82	744.0	2	372.0	4:42	2.35	99.37
APR 82						
MAY 82						
JUN 82	672.0	3	224.0	3:38	1.211	99.46
JUL 82	144.0	1	144.0	0:14	.2333	99.84
AUG 82						
SEP 82						
OCT 82	664.0	3	221.33	1:26	.4777	99.78
NOV 82	432.0	6	72.0	4:30	0.75	98.96
DEC 82	288.0	1	288.0	5:24	5.40	98.13
JAN 83	744.0	5	148.8	24:36	4.92	96.69
FEB 83	672.0	2	336.0	3:31	1.758	99.48
MAR 83	744.0	1	744.0	0:26	.4333	99.94
APR 83	720.0	2	360.0	0:57	.475	99.87
	6496.0	31	209.55	35:54	61.54	1.996

CALCULATE

BASELINE

TRROUBLE CATEGORIES LOST TIME AND EVENTS

A	B	C	D	E	F	G	M	N	P	OUTAGE	AVAIL
2	12	11	1	1		1				3	31
1:55	44:18	10:27	1:36	0:05		2:52				0:41	61:54

EVENTS

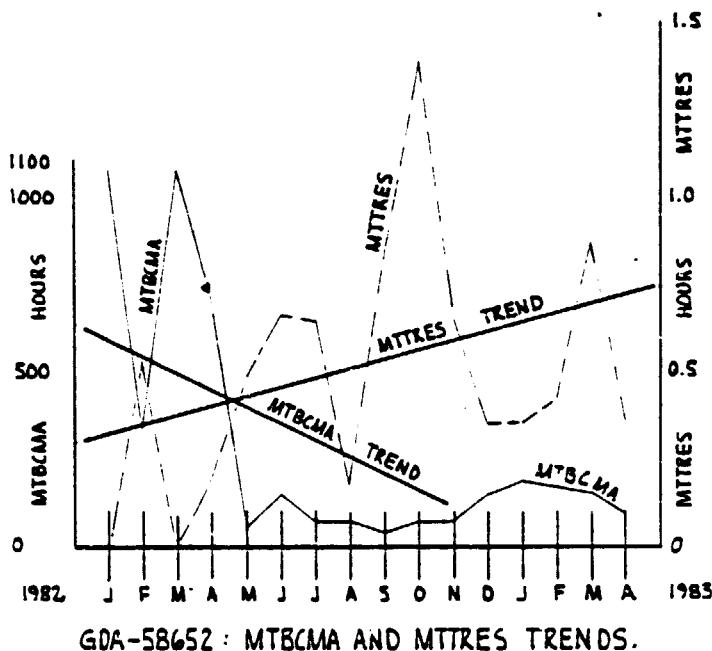
LOST TIME

GDA-58652, Madrid via TAT-6 Cable

The circuit was analyzed over a 16 month period, January 1982 through April 1983, in an attempt to identify areas of concern. The table shows 11633.0 operational hours for this interval, 64:13 total outage hours, and a significant amount of interruptions, 101. It has failed to meet the network availability objective the last 12 consecutive months and has a 16 month availability baseline of 99.44%. In spite of the number of interruptions the baseline mean-restore-time of 0.639 hours reflects expedient restorative actions. Of the total CMA's (101) documented during this period, 57 (56.43%) were classified B-outages, Leased Systems Fault.

Further analysis, since January 1982, reveals the following data. Of the 101 CMA's 78 were in Spain; 39 of the 78 were at Madrid; 29 of the 78 were cut coaxial cables or cable problems in Spain; and 24 of the 101 were cleared-while-checking. Of the 24, 12 of 12 were cleared in Spain when GSFC's receive path was a reported open condition.

Also presented is a graphical interpretation of the data shown in the table. The restore-trend over the 16 month interval is not a major concern because all plots are below the network baseline. The significance of this graph are the MTBCMA plots, respectively. The circuit has exhibited an unfavorable performance level since May 1982; for the past 12 months; and it is recommended that -58652 be deactivated and replaced with a more reliable TAT.



GDA-58652, MADRID via TAT-6

ORIGINAL PAGE IS
OF POOR QUALITY

MO. / YR.	OP.	HOURS	CMA's	MT BCMA	OUT. HOURS	MTTRES	AVAIL.
JAN 82	744.0	0	1073.59	0	0	0	100.00
FEB 82	672.0	2	336.0	1:04	.5333	99.84	
MAR 82	744.0	0	1073.59	0	0	0	100.00
APR 82	720.0	1	720.0	0:11	.1833	99.97	
MAY 82	744.0	11	67.636	5:19	.4833	99.29	
JUN 82	717.0	5	143.4	3:20	.666	99.54	
JUL 82	744.0	10	74.4	6:24	.640	99.14	
AUG 82	744.0	10	74.4	1:50	.183	99.75	
SEP 82	720.0	17	42.353	13:59	.8225	98.06	
OCT 82	744.0	10	74.4	13:52	1.386	98.14	
NOV 82	720.0	10	72.0	6:26	.6433	99.11	
DEC 82	740.0	5	145.2	1:45	.350	99.76	
JAN 83	744.0	4	12.4	1:28	.3666	99.33	
FEB 83	672.0	4	168.0	1:41	.4208	99.75	
MAR 83	744.0	5	148.8	4:22	.8733	99.41	
APR 83	720.0	7	102.86	2:32	.362	99.65	
	11633.0	101	115.18	64:13	0.639	99.44	

CALCULATE

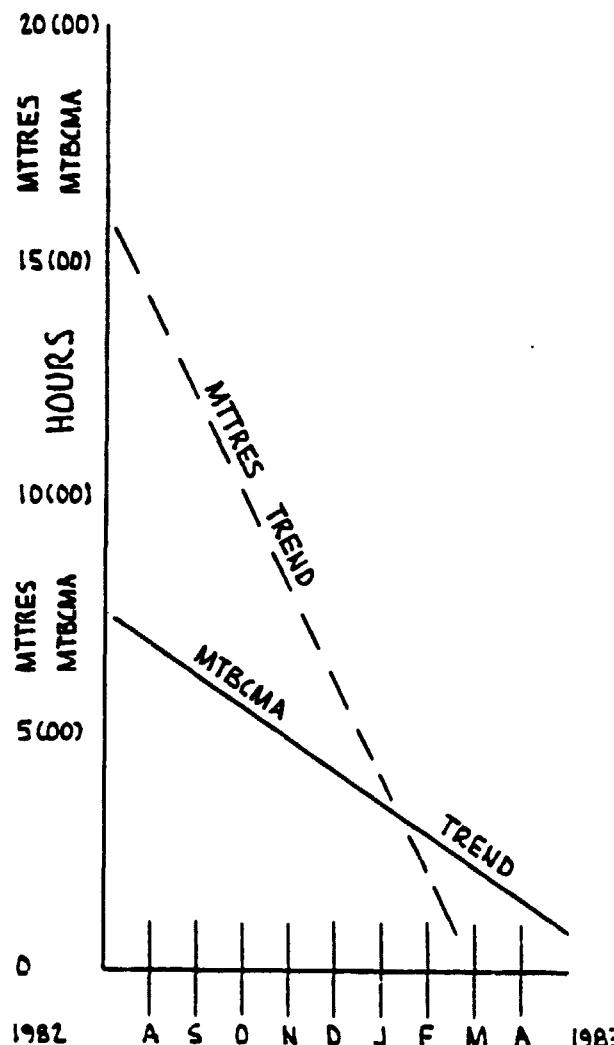
TROUBLE CATEGORIES LOST TIME AND EVENTS

A	B	C	D	E	F	G	H	N	P	OUTAGE	AVAIL
7	57	27	1	4			5				101
2:02	42:17	13:36	0:35	2:23						3:20	64:13

WUI-186, Chilton (IRAS CC)

The wideband circuit GSFC/Chilton has been in operation since August 1982. An analysis was performed because -186 has exhibited aperiodic low availabilities and a 9 month 97.55% availability mean. It has logged 6480.0 operational hours, 28 CMA's, and 158:39 outage hours. The overall mean-restore-time is 5.66 hours which is worse than the established 24 month parameter. Outage hours within category B; commercial carrier System Faults; represent 64.10% of the total lost time. The single interruption in September 1982 of 47:34 hours was a result of a faulty line in Chilton, England. Other failures, since August 1982, indicate that equipment problems exist on the Mondial-Madley-Didicott segments and satellite interference anomalies which impede data throughput.

Also presented is a graph depicting the MTBCMA and MTTRes trends. Of particular concern is the unfavorable MTBCMA trend. It appears that the trend will not reverse until there is a higher equipment reliability in the European area.



WUI-186 : 9 MONTH
MTBCMA AND MTTRES TRENDS.

WUI-186, CHILTON (IRAS CC)

ORIGINAL PAGE IS
OF POOR QUALITY

MO./YR.	OP.	HOURS	CMA's	MTBCMA	OUT.	HOURS	MTTR'S	AVAIL.
JAN 82								
FEB 82								
MAR 82								
APR 82								
MAY 82								
JUN 82								
JUL 82								
AUG 82		672.0	43	168.0	7:30	1.883	98.88	
SEP 82		720.0	1	720.0	47:34	47.566	91.39	
OCT 82		744.0	1	744.0	4:35	4.583	99.38	
NOV 82		720.0	0	1083.96	0	0	100.00	
DEC 82		744.0	0	1073.59	0	0	100.00	
JAN 83		744.0	4	186.8	29:14	7.40	96.03	
FEB 83		672.0	6	112.0	26:23	4.397	96.07	
MAR 83		744.0	8	93.0	30:25	3.8023	95.91	
APR 83		720.0	4	180.0	180:0	3.158	98.25	
CALCULATE		6480.0	28	231.43	158:39	5.666	97.55	BASELINE

BASELINE

TRROUBLE CATEGORIES LOST TIME AND EVENTS

A	B	C	D	E	F	G	H	N	P	OUTAGE	AVAIL	EVENTS	LOST TIME
2	11	9	3			3						28	
3:55	101:42	37:01	7:12			8:49						158:39	

ORIGINAL PAGE IS
OF POOR QUALITY

Table V
Network Lost Time By Trouble Category

TROUBLE CATEGORIES	MAY 1982	JUNE 1982	JULY 1982	AUGUST 1982	SEPTEMBER 1982	OCTOBER 1982
A - Undetermined	29:32	39:49	18:58	45:19	49:53	37:42
B - Leased System Fault	176:45	346:09	185:29	508:43	564:31	376:04
C - Carrier Control Time	56:34	290:52	231:40	129:14	143:24	175:43
D - Government Personnel	157:35	75:02	23:29	22:18	7:13	21:54
E - Government Equipment	114:25	206:19	153:33	47:45	3:43	3:43
F - Government Facilities	-	-	18:02	-	-	-
G - R F Anomalies	2:50	83:55	23:05	5:24	21:40	15:49
H - Man-Made Damage	-	2:57	30:19	24:2	29:59	-
I - Acts of Nature Damage	-	:45	24:02	-	:48	52:46
J - Electrical Power	9:54	1:34	:29	40:35	25:08	7:44
TOTAL LOST TIME	547:35	1047:22	708:37	823:42	846:19	715:00
SCHED OPER HOURS	409937:01	418271:26	386098:48	356649:57	362814:52	438771:59
AVAILABILITY Percent	99.86	99.75	99.82	99.77	99.77	99.84

TROUBLE CATEGORIES	NOVEMBER 1982	DECEMBER 1982	JANUARY 1983	FEBRUARY 1983	MARCH 1983	APRIL 1983
A - Undetermined	29:18	48:05	37:00	21:27	158:06	41:53
B - Leased System Fault	741:45	533:26	691:56	623:27	1148:48	760:49
C - Carrier Control Time	357:38	110:26	366:51	179:23	327:32	206:57
D - Government Personnel	3:33	9:41	15:46	3:41	1:44	-
E - Government Equipment	27:18	9:06	3:04	18:29	130:50	6:11
F - Government Facilities	-	-	-	-	-	14:02
G - R F Anomalies	13:05	:48	3:11	31:13	10:54	24:12
H - Man-Made Damage	41:51	-	-	108:50	18:43	3:02
I - Acts of Nature Damage	489:33	128:51	35:39	134:09	711:55	51:51
J - Electrical Power	53:56	13:05	15:52	4:00	20:53	4:50
TOTAL LOST TIME	1739:45	847:26	1184:44	1108:30	2529:25	1113:47
SCHED OPER HOURS	425796:37	433023:13	450948:15	406790:09	457067:22	449465:46
AVAILABILITY Percent	99.59	99.80	99.74	99.73	99.45	99.75

ORIGINAL PAGE IS
OF POOR QUALITY

Table VI
Network Circuits By Mode for One Year*

MONTH	TELE-TYPE	ANALOG VOICE GRADE	ANALOG ALTERNATE VOICE/ DATA	ANALOG NARROW-BAND DATA	FAC-SIMILE	ANALOG WIDE-BAND DATA	DIGITAL NARROW-BAND DATA	DIGITAL WIDE-BAND DATA	VIDEO
May 1982	58	200	208	16	2	14	19	44	5
June 1982	59	210	215	16	2	14	20	53	5
July 1982	57	194	211	17	2	14	20	54	5
August 1982	56	142	193	17	2	14	22	42	5
September 1982	56	197	209	16	2	14	21	42	5
October 1982	58	211	218	18	2	14	22	55	5
November 1982	55	226	216	18	2	14	24	56	5
December 1982	54	212	214	18	2	14	23	54	5
January 1983	56	222	219	14	2	4	28	60	5
February 1983	55	225	217	14	2	14	29	60	5
March 1983	54	238	211	11	2	14	36	59	5
April 1983	54	248	193	13	2	14	52	65	5

* The definition of these modes are defined in the FY 83-1 Nascom System Development Plan (NSDP)

Table VII
Network Statistics for One Year

MONTH	NUMBER OF STATIONS	TOTAL CIRCUITS	TOTAL CKTS WITH LOST TIME	CIRCUITS BELOW OBJECTIVE	TOTAL INTERRUPTIONS	MEAN TIME TO RESTORE
May 1982	130	566	132	78-142	315	1:44
June 1982	133	594	199	115-192	473	2:13
July 1982	131	574	147	101-182	374	1:54
August 1982	135	493	150	94-192	373	2:12
September 1982	134	562	144	89-162	343	2:28
October 1982	138	603	135	75-122	384	1:52
November 1982	136	616	197	124-202	468	3:43
December 1982	132	596	134	81-132	274	3:06
January 1983	139	620	162	89-142	359	3:18
February 1983	138	621	155	99-162	334	3:32
March 1983	139	630	217	156-252	390	6:29
April 1983	140	646	188	101-162	446	2:30

ORIGINAL PAGE IS
OF POOR QUALITY

'B' OUTAGE HRS. 'B' INTERRUPTIONS MTTRES

J	223:48	75	2.984
F	147:20	72	2.0463
M	267:08	100	2.6713
A	180:42	72	2.5097
M	176:45	113	1.3661
J	346:09	142	2.4376
J	185:29	122	1.5203
A	508:43	203	2.5059
S	564:31	153	3.6896
O	376:04	173	2.1738
N	741:45	238	3.1166
D	533:26	195	3.4415
J	691:56	186	3.7200
F	623:27	195	4.0222
M	1148:48	206	5.575
A	750:49	217	3.506

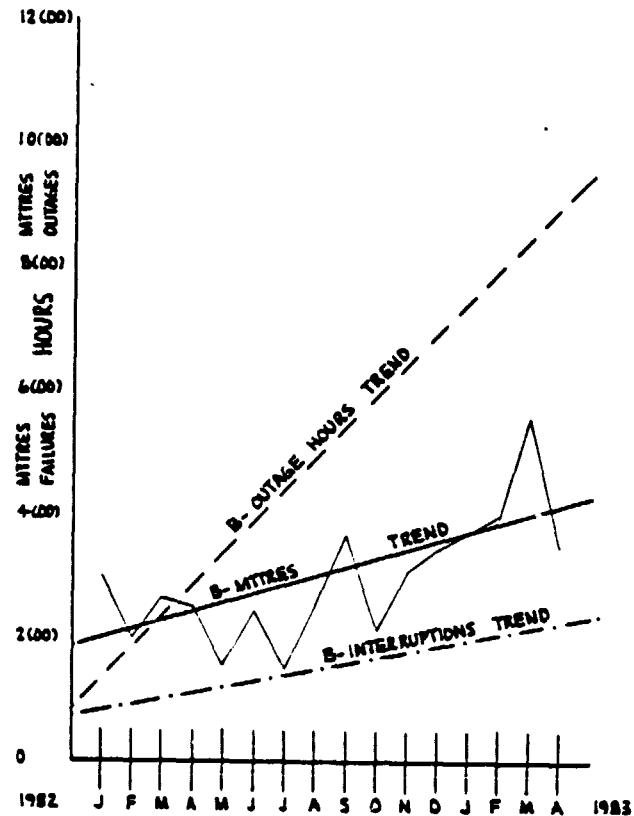


FIG.4: 16 MONTH B-CATEGORY MTTRES TREND.

Figure 4: SUMMARY

Since January 1983, Network Review and Analysis has presented several network MTTRes illustrations. Shown above is another example, and in this case the commercial carriers' impact since the network utilizes 99.50% leased services. Category "B," as defined in the trouble category legend, was plotted for the last 16 months. Commencing September 1982, the mean-time-to-restore data has increased steadily. Leased service interruptions and faults commencing August 1982 have proportionally increased. Factors affecting this trend may be the divestiture of AT&T and the formation of independent BOC's.

May 1983

SPECIAL PRESENTATION

Analysis of Nascom Network Analog Wideband Data Circuits (WBD)

Introduction

An analysis of all analog wideband data (WBD) circuits was performed by Network Review and Analysis (NR&A) for 12 months; May 1982 through April 1983. The purpose of the study was to determine the WBD system availability and reliability. The data contained herein was compiled from the maintenance data historical records and is presented in the table. Refer to the Nascom System Development Plan (NSDP) for a more detailed overview and definitions.

Data Discussion

The analysis was conducted in a continuing attempt to isolate specific problems within the NASCOM Network. The table shows the monthly statistics since May 1982 and includes the operational hours, the number of corrective-maintenance-actions (CMA's), the mean-time-between-corrective-maintenance-actions (MTBCMA), the monthly accrued outage hours, the mean-time-to-restore (MTTRes) calculation, and the respective availability for the month. The WBD system has exhibited superior operational support for the past 12 months. For the interval, 112593.0 scheduled operational hours were logged on 14 circuits. There were 7 CMA's thereby establishing a MTBCMA baseline of 16084.7 hours and a MTTRes baseline of 5.128 hours. The system failed to meet the network availability objective one month however the overall 99.97% parameter reflects high reliability towards mission support. The outage that occurred in July 1982 on RMW-2 for 24:20 hours (Madrid STDN/Robledo) was due to an open condition caused by man-made damage between NASCOM and the site. In September 1982, an outage on GWAP-8090-T (Houston via Satcom) for 3:46 hours was restored by increasing output power at the Greenbelt transmitter. Another circuit, GWAP-8045-T (Sioux Falls via Satcom) was also affected for the same length of time. On November 16th, NCW-102 (Canberra) failed for 40 minutes; it cleared while checking. On February 8, 1983, GWAP-8045-T was again affected for 40 minutes. The commercial carrier increased power at Greenbelt and changed antennas. Two outages affected the MTBCMA for March 1983. On the seventh, GWAP-8045-T failed due to negative contact and was cleared while checking 1:57 hours later. The second interruption impaired NCW-102 on the twenty-ninth due to a broken interconnect wire at Mt. Stromlo, Australia, lasting for 45 minutes.

WBD Summary

The data shown in this special presentation of the NASCOM-WBD indicates that the system is operating above network standards and objectives. In the "Data Discussion" it appears that GWAP-8045-T is the only circuit having multiple outages. The WBD MTTRes baseline of 5.128 hours is not an adverse condition although it is worse than the established 2.92 hours network parameter. NR&A will continue to monitor the WBD system and report anomalies as they arise.

ANALOG WIDEBAND DATA (WBD), MAY 1983

ORIGINAL PAGE IS
OF POOR QUALITY

MO./YR.	OP.	HOURS	CMA's	MT BCMA	OUT.	HOURS	MTTRES	AVAIL.
MAY 82		9364.0	0	13512.26		0	0	100.00
JUN 82		9288.0	0	13402.6		0	0	100.00
JUL 82		9362.0	1	9362.0	24:20	24.33	99.74	
AUG 82		9565.0	0	13802.31	0	0	0	100.00
SEP 82		9282.0	2	4641.0	7:32	3.7666	99.91	
OCT 82		9637.0	0	0	0	0	0	100.00
NOV 82		9306.0	1	9306.00	:40	.666	.99.99	
DEC 82		9613.0	0	13871.6	0	0	0	100.00
JAN 83		9577.0	0	13819.6	0	0	0	100.00
FEB 83		8680.0	1	8680.0	:40	.666	.99.99	
MAR 83		9601.0	2	4800.5	2:42	1.350	99.97	
APR 83		9318.0	0	13445.88	0	0	0	100.00
		112593.0	7	16084.7	35:54	5.128	99.97	

CALCILATE

TROUBLE CATEGORIES LOST TIME AND EVENTS

A	B	C	D	E	F	G	H	N	P	OUTAGE	AVAIL
								1			7
	4	2									
	8:57	2:37								24:20	35:54

MAINTENANCE MANAGEMENT REPORT FOR MAY 1983

ORIGINAL PAGE IS
OF POOR QUALITY

NETWORK REVIEW AND ANALYSIS DATA ACTIVITY

1.0	<u>TROUBLE TICKETS RECEIVED</u>	299
2.0	<u>NO. OF CIRCUITS RELEASED FOR MAINT. OR OTHER PURPOSES</u>	47
3.0	<u>NUMBER OF COMMUNICATIONS SERVICE AUTHORIZATION (CSA's) RECEIVED</u>	55
4.0	<u>ANALYSES IN PROGRESS</u>	

The following analyses are in progress and will be presented in future reports:

- o GWDD-8014, Houston (JSC) via SATCOM;
- o GDA-58550, Bermuda via Andover;
- o GDA-58456, Madrid via TAT-5 Cable;
- o GDA-59052, Madrid via TAT-6 Cable;
- o E-1044, Madrid via Etam;
- o NASCOM NETWORK TELETYPE CIRCUITS.

NR&A WILL CONSIDER ANALYSIS OF ANY CIRCUIT NOMINATED BY THE READER THAT MAY WARRANT FAILURE ANALYSIS. PLEASE COMPLETE THE FORM BELOW AND MAIL TO THE ADDRESS SHOWN ON PAGE 3 OF THIS AVAILABILITY REPORT.

SITE: _____ CIRCUIT(S) NO: _____

DATE: _____

TRBL. NARRATIVE: _____

SIGN: _____ SUPV. APPROVAL: _____

GLOSSARY

Abbreviation	Name	Location
ACT	Australian Capital Territory	Australia
AFB	Air Force Base	
AFCERL	Air Force Communications Electronic Research Lab	Hanscom Field, Mass.
AFETR	Air Force Eastern Test Range	Patrick AFB, FL.
AFWTR	Air Force Western Test Range	Vandenberg AFB, CA.
AFS	Air Force Station	
ALASCOM	Alaska Communications, Inc.	U.S.A.
ARC	Ames Research Center	Moffett Field, CA.
ASC	American Satellite Corporation	U.S.A.
ATC	Australian Telecommunications Commission	Australia
ATT	American Telephone and Telegraph Company	U.S.A.
AOS	Atlantic Ocean Satellite	
BTI	British Telecommunication International	Great Britain
bps	bits per second	
BTCF	Buckhorn Technical Control Facility	Buckhorn, CA.
CD&SC	Communications Distribution & Switching Center	Kennedy Space Center, FL.
CITCO	California Interstate Telephone Co.	California
CCAFS	Cape Canaveral Air Force Station	Florida
CMA	Corrective Maintenance Action	
COMMSEN	Communications Center	
COMPAC	Trans-Pacific Submarine Telephone Cable	Vancouver/Honolulu/Sydney
COMSAT	Communications Satellite Corporation (Agent for INTELSAT)	Worldwide
COMSTAR	AT & T Domestic Satellite	
COTC	Teleglobe Canada	Canada
CRC	Communications Research Center	Shirley's Bay, Can.
CTNE	Compania Telefonica Nacional De Espana	Spain
CTO	Communications Technical Office	
CUC	Computer Usage Corporacion	Bethesda, MD.
CWL	Cable & Wireless Limited	Atlantic Islands

ORIGINAL PAGE IS
OF POOR QUALITY

GLOSSARY (Cont'd)

Abbreviation	Name	Location
C&P	Chesapeake & Potomac Telephone Co.	U.S.A.
DAT	Analog Narrowband Data	
DCA	Defense Communications Agency	U.S.A.
DCR	Daily Communications Report	
DDS	Digital Narrowband Data	
DFRC	Dryden Flight Research Center	Edwards AFB.
DOD	Department of Defense	U.S.A
DSCC	Deep Space Communication Center	Canberra, Australia
DSS	Deep Space Site	
ENTEL	Empresa Nacional de Telecommunications	Chile
ETE	External Telecommunications Executive	England
FAA	Federal Aviation Agency	U.S.A.
FTC	French Telecommunications, Inc.	NY
GDA	Ground Data Alternate	
GE	General Electric	Valley Forge, PA.
GP	Government Post Office (Agent for ETE)	England
GSFC	Goddard Space Flight Center	Greenbelt, MD.
HF	High Frequency	
ICS	International Communications Senegal	Dakar
IMC	International Maintenance Control	
INTELSAT	International Telecommunications Satellite Consortium	Worldwide
IOS	Indian Ocean Satellite	
ITT	ITT World Communications, Inc.	Worldwide
JHU	Johns Hopkins University (Applied Physics Laboratory)	Baltimore, MD.
JPL	Jet Propulsion Lab, Cal Tech. U.	Pasadena, CA.
JSC	Johnson Space Center	Houston, TX.
kbps	kilobits per second	
kHz	KiloHertz	
KSC	Kennedy Space Center	Merritt Island, FL.
LERC	Lewis Research Center	Cleveland, OH.
LRC	Langley Research Center	Hampton, VA.
M-	Mainland Cable (M-1, etc.)	California/Hawaii

GLOSSARY (Cont'd)

Abbreviation	Name	Location
MCC	Mission Control Center	Johnson Space Center, TX
MCI	MCI Telecommunications Inc.	U.S.A.
MHz	MegaHertz	
MIT	Massachusetts Institute of Technology	Cambridge, MA.
MOBLAS	Mobile Laser Van	
MSFC	Marshall Space Flight Center	Huntsville, AL.
MTBCMA	Mean-Time-Between-Corrective-Maintenance-Actions	
MTBF	Mean-Time-Between-Failure	
MTTR	Mean-Time-To-Repair	
MTTRes	Mean-Time-To-Restore	
NASCOM	NASA Communications	Worldwide
NCAR	National Center for Atmospheric Research	Boulder, CO.
NOAA	National Oceanic and Atmospheric Administration	Suitland, MD.
OTC	Overseas Telecommunications Commission	Australia & Pacific
PDL	Ponce De Leon	Florida, U.S.A.
POS	Pacific Ocean Satellite	
PTT	Pacific Telephone & Telegraph Company	U.S.A.
RCA	RCA Global Communications, Inc.	Worldwide
RCAAM	RCA American Communications, Inc.	U.S.A.
RFO	Reason for Outage	
RI	Rockwell International Corporation	Downey, CA.
SAO	Smithsonian Astrophysical Observatory	Cambridge, MA.
SATCOM	RCA American Comm Inc. Domestic Satellite	
SBT	Southern Bell Telephone Company	U.S.A.
SLC	Science Laboratory Corp.	El Segundo, CA.
SPAR	SPAR Aerospace Agency	Weston, Canada
STDN	Satellite Tracking & Data Network	

ORIGINAL PAGE IS
OF POOR QUALITY

GLOSSARY (Cont'd)

Abbreviation	Name	Location
SWB	Southwestern Bell Telephone Company	U.S.A.
TAT	Trans-Atlantic Submarine Telephone Cable (TAT-1, 2, etc.)	U.S.A. East Coast/ Europe
TDRSS	Tracking Data Relay Satellite System	U.S.A.
TRANSPAC	Trans-Pacific Submarine Cable (ATT)	Hawaii/Guam
TRT	TRT Telecommunications Corporation	Worldwide
TTY	Teletype	
UHF	Ultra High Frequency (300-3000 MHz)	
USGS	United States Geological Survey	U.S.A.
VDA	Analog Alternate Voice/Data	
VF	Voice Frequency	
VFTG	Voice Frequency Telegraph Terminal	
VFX	Facsimile	
VHF	Very High Frequency (30-300 MHz)	
VID	Video	
VOC	Analog Voice Grade	
WBD	Analog Wideband Data	
WCSC	West Coast Switching Center	Pasadena, CA.
WDD	Digital Wideband Data	
WESTAR	Western Union Domestic Satellite	
WSMC	Western Space and Missile Center	Vandenberg, CA
WUI	Western Union International, Incorporated	Worldwide
WUT	Western Union Telephone Company	U.S.A.